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**Controlling DoD Organization. Commandingd
Officer, Aberdeen Proving Ground, MD.**

AUTHORITY

**USA/FSTC ltr, 8 Nov 1979; USA/FSTC ltr, 8
Nov 1979**

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ABERDEEN PROVING GROUND, MD. DEVELOPMENT AND TEST SERVICES
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ABERDEEN PROVING GROUND, MARYLAND
FIRING RECORD

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OBJECT OF TEST: To Obtain Fragment Velocities
with Related Masses, and Spatial
Distribution of Fragments of
Shell, HE, Soviet, 122mm, Models
OF-471N, O-462A, and OF-462.

DATES OF TEST: FROM: 12 June 1952
TO: 27 April 1954

FIRING RECORD NO. B-11822

SHEET 1 of 5

AUTHORITY: MEMO, Chief, Library and
Museum Branch,
4 March 1952

W.O. NO. 962-05-00-3

ehc

DEVELOPMENT: Project No. TB-3-C035

AMMUNITION

11 27 Apr 54

12 2986

AD

SHELL: Three each, HE, 122mm, Soviet, Model OF-471N, Filler TNT.
(see photograph No. A78159, Incl. 5).

Three each, HE, 122mm, Soviet, Model O-462A, Filler - 90% Ammonium
Nitrate, 10% TNT. (see photograph No. A78158, Incl. 5).

Three each, HE, 122mm, Soviet, Model OF-462, Filler - 80% Ammonium
Nitrate, 20% TNT. (see photograph No. A78157, Incl. 5).

DETONATOR:

Nine each, Detonator, Electric, M36.

GROUP 3

Nine each, Detonator, M18.

DEGRADED AT 12 YEAR INTERVALS

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090 DIR 5280.00

TABLEAUATION OF AMMUNITION WEIGHTS

RD NO.	DATE FIRED	LOADING	LOADED SHELL w/o FUZE (lbs)	COMPOSITION C ₃ BOOSTER (lbs)	TETRYL PELLET (lbs)	SHELL AS FIRED (lbs)
14	14 April 53	TNT	54.50	0.15	0.013	54.66
15	24 April 53	TNT	54.61	0.15	0.013	54.77
16	21 May 53	TNT	54.77	0.16	0.013	54.94
		MODEL O-462A				
11	12 June 52	AT/90	46.06	0.15	0.013	46.22
17	4 June 53	AT/90	46.05	0.18	0.013	46.24
20	31 July 53	AT/90	46.18	0.16	0.013	46.35
		MODEL OF-462				
13	8 Oct 52	AT/80	45.64	0.11	0.013	45.76
18	30 June 53	AT/80	46.41	0.13	0.013	46.55
19	15 July 53	AT/80	45.66	0.18	0.013	45.85

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FILED RECORD NO. B-11822
SHEET 2 of 5

FACILITIES

A. TEST SET UP:

1. Board Panels: The facilities for obtaining spatial distribution were two panels, 9.00 feet in height, constructed on concentric, 180 degree arcs of 30 and 60 feet radii and positioned so that the panels include 360 degrees. Panel boards were one inch, dressed ponderosa pine (one inch dressed boards measure 25/32 inch). The panels were gridded and numbered in accordance with "Layout of Panels for Number and Distribution of Fragments" on pages 32 thru 40 of O.P.M. 40-23.

2. Ricochet Stop: A ricochet stop was provided for both radii midway from the center of the setup to each panel. Each forming an arc of 180°, and constructed to prevent ricocheting fragments from impinging on the board panel.

3. Velocity Fragment Recovery: A recovery box 8' X 4' X 6', filled with a quantity of composition wallboard, each 48" X 96" X $\frac{1}{2}$ ", and faced with a flash target of duralumin (.020 inch thick), was placed on its side approximately 23 feet from the center of the setup.

B. FRAGMENT VELOCITY MEASUREMENT:

A high speed motion picture camera, operating at approximately 8,000 frames per second, was used to photograph the flash target. The camera utilizes an electronic circuit, employing a frequency standard and a neon lamp, which causes exposed pips to appear on the film strip at time intervals of 0.001 second. Detonation of the shell is recorded on the film strip by reflection of the shell detonation flash from a mirror placed adjacent to the flash target; and or by the detonation flash of a small tetryl charge, placed so as to be visible by the camera, initiated electrically through a circuit in parallel with the composition C3 booster. The shell fragments perforating the flash target cause subsequent individual flashes to appear. The intervals between the initial and each subsequent flash are converted to time intervals through the film calibration. The distance from the shell surface to the flash screen is used with the time intervals to compute the average velocity for each of the individual fragments. The flash target was placed so that the center was perpendicular to the shell axis at the center of gravity of each shell. Fragments perforating the flash target were recovered from the composition wallboard and identified as to weight and velocity. The recovered fragments are shown in photograph No. A97557 and No. A97558, Incl 5.

C. SHELL POSITION:

Each shell was horizontally suspended at a height of 4.50 feet (from the bottom of the panels), with the panel axis passing through the center of gravity of the shell. The nose end of the shell was oriented toward panels number one, with the projected shell axis in a radial plane containing the initial edge of panels number one.

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FIRING RECORD NO. B-11822
SHEET 3 of 5

D. STATIC DETONATION:

An M36 electric detonator and an M18 detonator were used with a 90 grain tetryl pellet and a composition C3 charge molded into the fuse booster cavity. Initiation was accomplished by energizing the firing line with the charge from a 120 volt firing line condenser.

E. RECORDING DATA:

Perforations and penetrations of the panel were measured and recorded as the numerators of the fractional dimensions in sixteenths of an inch. Perforations or penetrations having any dimension less than one sixteenth inch were not recorded. The spatial distribution of hits are represented by a plot on a gridded form. (Panel A, APG 11876-15 PR; Panel B, APG 11876-14 PR; both dated 27 October 1944).

ROUND-BY-ROUND DATA

Contained in Each Round:

1. Cover Sheet - Shell markings.
2. Velocities and Related Masses.
3. Measurements of Perforations and Penetrations.
4. Plot Sheets of Spatial Distribution.

*Army Material Atm't.
Foreign Science & Technology Center
Munitions Bldg. West Rd. 20315*

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FIRING RECORD NO. B-11822
SHEET 4 of 5

SUMMARY

Table I

VELOCITY FRAGMENTS				HITS IN PANELS					
RD. NO.	SAMPLE SIZE	Avg Wt (grs)	Avg Vel (fps)	30 ft RADIUS			60 ft RADIUS		
				PERFS	PENS	% PERFS	PERFS	PENS	% PERFS
<u>MODEL OF-471N, TNT</u>									
14	75	127.9	2805	127	366	25.8	40	163	19.7
15	74	116.0	2932	187	532	26.0	94	189	33.2
16	61	119.6	2985	114	260	30.5	55	149	27.0
Avg	70	121.3	2903	143	386	27.0	63	167	27.4
<u>MODEL O-462A, AT/90</u>									
11	149	35.2	2393	319	1518	17.4	101	640	13.6
17	239	19.5	2565	387	1404	21.6	130	509	20.3
20	334	18.2	2376	426	2056	17.2	134	743	15.3
Avg	241	22.1	2444	377	1659	18.5	122	631	16.2
<u>MODEL OF-462, AT/80</u>									
13	60	99.6	2968	185	279	39.9	97	84	53.6
18	71	106.4	2751	110	170	39.3	55	84	39.6
19	72	94.3	3044	124	216	34.5	54	75	41.9
Avg	68	100.1	2928	140	222	38.7	69	81	46.0

Table II

Average Density of Fragments In Panel Setup Per Square Yard

SHELL NUMBER	FILLER	30 ft RADIUS			60 ft RADIUS		
		PERFS	PENS	TOTAL	PERFS	PENS	TOTAL
14, 15 & 16	TNT	1.52	4.10	5.61	0.33	0.89	1.22
11, 17 & 20	AT/90	4.00	17.60	21.60	0.65	3.35	4.00
13, 18 & 19	AT/80	1.49	2.36	3.84	0.37	0.43	0.80

The panel boards were of one inch dressed ponderosa pine.

The velocities were measured over an average of approximately 22.75 feet.

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FIRING RECORD NO. B-11822
SHEET 5 of 5

OBSERVATIONS

The Test Results Indicate That:

Shell, 122mm, Soviet, Model OF-471N, Filler TNT, will produce an average side fragment of 121.3 grains, with an initial velocity of 3106 fps, producing an average casualty range of approximately 83 feet. In the panel of 30 foot radius, 5.61 hits per square yard were inflicted, 1.52 of which were perforating. In the panel of 60 foot radius, 1.22 hits per square yard were obtained, 0.33 of which were perforating. The main fragment spray fell between 77 and 103 degrees from the nose of the shell.

Shell, 122mm, Soviet, Model O-462A, Ammonium Nitrate 90% - TNT 10%, will produce an average side fragment of 22.1 grains, with an initial velocity of 2762 fps, producing an average casualty range of approximately 75 feet. In the panel of 30 foot radius, 21.40 hits per square yard were inflicted, 4.00 of which were perforating. In the panel of 60 foot radius 4.00 hits per square yard were obtained, 0.65 of which were perforating. The main fragment spray fell between 77 and 106 degrees from the nose of the shell.

Shell, 122mm, Soviet, Model OF-462 , Ammonium Nitrate 80% - TNT 20%, will produce an average side fragment of 100.1 grains, with an initial velocity of 3049 fps, producing an average casualty range of approximately 82 feet. In the panel of 30 foot radius, 3.84 hits per square yard were inflicted, 1.49 of which were perforating. In the panel of 60 foot radius, 0.90 hits per square yard were obtained, 0.37 of which were perforating. The main fragment spray fell between 83 and 106 degrees from the nose of the shell.

NOTE: A perforation of the pine board panel is considered a casualty. A casualty producing fragment is considered as such, if, upon reaching the panel, the potential energy is 58 ft/lbs or greater (see TM 9-1907).

APPROVED:

Benjamin S. Goodwin
BENJAMIN S. GOODWIN
Chief,
Arms & Am Div

Claude E. Brown
CLAUDE E. BROWN
Chief, Bomb and
Fragmentation Branch

Orion L. Rogers
ORION L. ROGERS
Engineering Aide

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FIRING RECORD NO. B-11822
INCLOSURE NO. 1

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Aberdeen Proving Ground, Maryland
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Aberdeen Proving Ground, Maryland
Attn: G. B. Jarrett

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Redstone, Ala.*

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FILING RECORD NO. B-11822
INCLOSURE 2

AUTHORITY

Office Memorandum

Chief, Library and Museum Branch
4 March 1952 with one inclosure

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SEARCHED

A

B-1172 2-

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OFFICE MEMORANDUM:

TO : Chief, A&A Div. D&PS
FROM : Chief, Library & Museum Branch
SUBJECT : Shell Fragment Identification

1. Attention is invited to the attached correspondence. This office has contacted the Director's office for permission to instigate this program. It is requested that Mr. Willan detonate possibly eight soviet projectiles to obtain velocities and patterns of the fragments. The Director's office says that this can be done on an inbetween basis by Mr. Willan, that he can give us the information as it becomes available.

2. If your office concurs we will appreciate such expeditious effort as is consistant with the present work load. Mr. Reed at extension 3296 will furnish the information as Mr. Willan requests it. Mr. Willan can discuss further details with the writer or Mr. Kempf.

/s/ Jarrett
G. B. JARRETT

1 Incl
1-ltr from EUSA

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B-11822

HEADQUARTERS
EIGHTH UNITED STATES ARMY KOREA (EUSA)
Office of the Ordnance Officer
APO 301

KODP 386.3

12 February 1952

SUBJECT: Shell Fragment Identification.

APC 386.3/174

TO : Commanding General
Aberdeen Proving Ground
Maryland

1. EUSA OTID teams have been using the draft copies of "Ready Reference Manual for the Identification of Soviet Shells and Shell Fragments" for the past three months. They report that the information contained in the manual has been of great assistance and value in their work. There are, however, additional features which they all agree should be included in the final version of the manual.

a. U.S. Shell and Shell Fragments. OTID personnel are frequently called upon to identify fragments of U.S. shells which have been fired by the enemy. Our combat troops are reluctant to accept such identification unless they can be shown the direct similarity between the fragments and either U.S. shell or drawings thereof. Accordingly, it seems highly desirable to include in the identification manual as a section, or prepare as a combination manual, appropriate discussion, drawings, and photographs pertaining to U.S. shells.

b. Seat Keying Indentations. Although keying indentations of rotating band seats appear on drawing sheets in the present manual, they are of reduced size and not suitable for use in the field. In a majority of cases in which OTID personnel are called on for fragment identification, on-the-spot identification is desired and time does not permit the use of mathematical computations. Therefore, a definite requirement exists for including in the manual full-scale, dimensioned drawings of keying indentations.

c. Fragment Radii. OTID personnel are frequently queried regarding the casualty-producing radius and the maximum fragment effectiveness areas of Soviet shells. All agree that data on these characteristics should be included in the manual.

2. Pending publication and issue of a revised manual which may include the additional features discussed above, it is requested that this office be furnished:

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a. Reproducible full-scale drawings of the keying indentations in the rotating band seats of all U.S. and Soviet artillery projectiles.

b. Data on the casualty-producing radius and the maximum fragment effectiveness areas of all Soviet high explosive shells.

FOR THE ORDNANCE OFFICER:

JOHN H. WEBER
Col, Ord Corps
Deputy Ord Officer

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FIRING RECORD NO. E-11822

INCLOSURE NO. 3

ROUND-BY-ROUND DATA

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FIRING RECORD NO. B-11822
INCLOSURE 3

ROUND NO. 14

SHELL, HE, 122mm, Soviet
MODEL, CP - 471H, (TNT)

14 April 1953

SHELL MARKINGS

OBVERSE

H
635
32-45
122
++

REVERSE

T
0Φ - 471H

BASE

179
79 45

Weight of Shell w/o Components- 54.50 lbs.
As Fired- 54.66 lbs.

Distance from Shell to the center of the 0.020" duralumin flash target- 22.67 ft.

Shell before firing is shown in AFG Photograph No. A78159.

Recovered fragments with their respective weights and velocities are shown in
AFG Photograph No. A97558.

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FRAGMENT VELOCITY DATA

~~CONFIDENTIAL~~Test of Shell, HE, Soviet, 122mm, TNT

Side Recovery Box Data

Proof Director Mr. O. L. RogersDate Fired 14 April 1953Distance from detonation point to target 22.67 feet. Round No. 14

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	N.R.	3276	33	0+	
2	151	2954	18	13	3276	34	2	
3	N.R.		19	15		35	1	
4	22		20	6		36	18	
5	398(2)	2963	21	2		37	93	2061
6	2		22	51	3173	38	N.R.	2498
7	7		23	98(2)	3173	39	956	3075
8	2		24	59	2351	40	225	2963
9	1		25	538	3123	41	57(2)	
10	55	2630	26	599	3173	42	496	2221
11	2	2856	27	812	2082	43	27	3075
12	110	2530	28	65	1686	44	55	2856
13	505	2897	29	11		45	439	2297
14	N.R.	3028	30	1		46	9	
15	25	2815	31	2		47	49	
16	1089	3123	32	3		48	407(3)	2562

Average velocity 2805 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.2 % for the highest velocity and \pm 2.9 % for the lowest velocity.Sheet 2 of 46~~CONFIDENTIAL~~ 13

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FRAGMENT VELOCITY DATA

B-11822

Test of Shell, HE, Soviet, 122mmSide Recovery Box DataProof Director Mr. O. L. RogersDate Fired 14 April 1953Distance from detonation point to target 22.67 feet. Round No. 14

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	2		65	202	3507			
50	462		66	1				
51	47		67	19(2)				
52	5	2613	68	2				
53	4		69	5				
54	4		70	139(2)				
55	2		71	2				
56	705	2613	72	7				
57	3	3042						
58	9							
59	5							
60	326							
61	3	1979						
62	144	3224						
63	1	3224						
64	18(2)	3028						

Average velocity 2805 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.2 % for the highest velocity
and \pm 2.9 % for the lowest velocity. Z ZSheet 2 of 26

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ORDNOG-737 19 FEB 48
FORMERLY BROZ-F-281

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PENETRATIONS OF SHELLS IN PANELS

B-11822

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT
Soviet

IN PANELS WITH RADII OF 30° AND FEET

ACT NO. 1
FIRING ROLL NUMBER

PRIORITY NUMBER

XEEKXAXXX Sheet 1 of 13

XEEKXAXXX Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
8			1	1	1
			1	1	1
			1	1	1
Total				3	
9			7	5	2
Total				1	
12			2	1	1
Total				1	
14			1	1	1
Total				1	
16			1	1	3
Total				1	
21			1	1	1
Total				1	
			1	1	2
			1	1	1
Total				2	
	3	2	2	1	2
			3	2	4
			1	1	1
	1				3
			1	1	1
			1	1	3
				2	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25	3	1	4	3	6
			2	2	2
			2	1	1
Total		1		3	
26	6	4	1	1	1
	4	4	2	1	3
	8	2	2	2	4
			6	3	7
Total		3			4
27	21	12	2	1	2
	2	1	2	1	1
	13	6	6	2	3
	9	4	3	2	9
	6	3	1	1	1
	4	3			
	24	10			
	24	6			
	10	5			
	3	2			
	4	3			
Total		11			5
28	14	4	3	2	4
	5	4	6	2	4
	6	3	2	1	1
	35	10	1	1	1
	11	6	3	2	4
Total		5			5
29	9	5	1	1	1
	10	6	1	1	1
	14	4	4	2	4

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B-11922

PENETRATIONS OF SHELLS IN PANELS						FIRING ROLL NUMBER	DATE 14 Apr 53				
PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT						PRIORITY NUMBER					
Soviet IN PANELS WITH RADIUS OF 30° AND FEET						XXXXXX Sheet 2 of 13					
						XXXXXX Round No. 14					
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	4	3	1	1	1	33	10	16	2	1	2
Total		4			4		10	5	2	1	1
							5	2	2	1	1
30	50	10	1	1	2		10	5	3	2	4
	64	16	5	3	4		29	7	2	1	1
	4	3	2	2	2		6	4			
Total		3			3		9	7			
						Total	11				9
31	4	3	1	1	1	34	22	12	1	1	1
	8	2	1	1	1		14	8	1	1	1
	3	2	1	1	1		11	6	2	1	1
	17	7	4	2	6		45	10	3	1	1
Total		4			4		15	8	1	1	1
							12	6	5	1	4
32	4	3	2	1	3		11	6	5	3	4
	8	3	2	1	2		12	5			
	14	9	4	1	4		9	7			
	15	8					4	4			
	10	4					32	8			
	5	3					54	18			
	6	4					20	9			
	4	4				Total	13				7
	24	9				35	6	4	3	2	2
	13	11					24	8	6	4	6
	10	5					8	6	8	4	5
	9	5					12	7	3	1	1
	12	8					22	8	2	2	6
	5	4					26	6	1	1	1
Total	14						8	6	1	1	1
							4	2	6	2	2
33	4	3	4	3	5		7	3	1	1	1
	8	6	1	1	4		4	1	1	1	1
	7	3	2	1	2						
	11	7	1	1	1						

OWBBS-737 19 FEB 48
FORMERLY SPOTX-Y-281

PENETRATIONS OF SHELLS IN PANELS

13-1182-2

DATE 14 APR 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT
Soviet
IN PANELS WITH RADIUS OF 30' ANDLINE NUMBER
FIRING REG. NUMBER

PRIORITY NUMBER

ROCKET X Sheet 3 of 13
Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FFECT
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
Total	10				10	
36	7	5	1	1	1	
	8	4	4	2	5	
	5	4	1	1	1	
	5	5	2	2	5	
		1	1	1		
		3	2	5		
		4	2	9		
Total	4				7	
37	16	11	2	2	2	
	4	3	5	3	5	
	17	12	3	1	4	
Total	3				3	
38	20	10	1	1	1	
	8	6	2	1	1	
		1	1	1		
Total	2				3	
39	24	8	2	1	2	
	20	16	1	1	1	
		2	1	2		
		7	3	4		
		1	1	1		
Total	2				5	
40	6	4	2	1	2	
	6	6	3	1	1	
		1	1	1		
		2	1	1		
		2	1	1		
		2	1	1		

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
Total			3	1	1	
41	8	4	2	1	3	
		3	2	4		
		1	1	1		
		2	1	1		
Total	1				4	
42			2	1	2	
		2	2	1		
Total					2	
43			2	1	1	
		4	2	3		
		1	1	1		
		1	1	1		
Total					5	
44	6	4	3	1	2	
		3	2	2		
		4	1	1		
		2	1	1		
		1	1	1		
		2	1	1		
		6	4	7		
		3	1	2		
		2	1	1		
		1	1	1		
Total	1				10	

CONFIDENTIAL

PENETRATIONS OF SHELLS IN PANELS

LOG NUMBER
FIRING PRACTICE NUMBER

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet
IN PANELS WITH RADII OF 30' AND FEETXXXXXX Sheet 4 of 13
XXXXXX Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
45	6	4	1	1	1
			4	3	2
			2	2	1
			1	1	1
			2	1	1
			7	4	4
			4	2	3
			2	1	2
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			3	2	2
			2	1	2
			2	1	1
			1	1	1
			4	4	2
			2	1	1
			2	1	1
			1	1	1
Total	1		20		
46	4	3	2	1	1
	8	4	3	1	1
			2	1	2
			3	1	1
			1	1	1
			4	1	3
			3	2	1
			1	1	1
			4	1	2
			4	1	3
			2	1	1
			1	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46 cont.			2	1	1
			2	1	2
			1	1	1
			1	1	1
			3	1	1
			2	1	2
			1	1	1
			4	2	1
			4	2	2
			3	2	1
			2	1	1
			3	2	2
			1	1	1
			5	1	2
			2	1	1
			1	1	1
			3	2	3
			1	1	1
			4	3	4
			5	3	1
			1	1	1
Total	2		16		
48	7	3	1	1	1
	12	7	3	2	4
			2	1	1
			1	1	1
			2	1	1
			3	2	2

PENETRATION OF SHELLS IN PANELS

R-1182-2

DATE 14 APR 53

PENETRATIONS OF SHELL 122MM, OF-471N LOADED TNT
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	1
			1	1	1
Total	2				9
49	4	2	2	1	4
			3	1	2
			2	1	1
			1	1	1
			2	1	1
			4	2	8
Total	1				6
50			3	2	3
			4	2	2
			2	1	2
			2	1	2
			1	1	1
			5	4	2
Total					6
51			4	2	4
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			4	2	2
			2	1	2
			1	1	1
Total					8
52			2	2	2
			3	2	1
			2	2	1
			2	1	1
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
52					
			1	1	1
			2	1	1
			4	2	8
			2	1	2
			2	1	1
			3	1	2
			5	3	5
			6	4	5
			4	3	4
			2	1	1
			1	1	1
			3	2	2
			1	1	1
Total					19
53	5	2	1	1	1
			1	1	1
			4	1	3
			2	1	1
			2	1	1
			5	2	4
			2	1	1
			1	1	1
			2	1	1
			4	2	4
			4	3	2
			3	1	2
			1	1	1
Total					19

GRCB-737 19 FEB 49
FORMERLY GPOZC-F-281

PENETRATIONS OF SHELLS IN PANELS

6-1182-2

DATE 14 Apr 53

FIRING ROLL NUMBER

PRIORITY NUMBER

XXXXXX Sheet 6 of 13

XXXXXX Round No. 14

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54			2	2	2
			2	1	1
			1	1	1
			2	1	2
			2	1	3
			8	3	4
			1	1	1
			5	1	2
Total					8
55			1	1	1
			2	1	1
			4	2	1
			2	1	2
			1	1	1
			1	1	1
			4	3	6
Total					7
56	8	4	1	1	1
			3	2	1
			1	1	1
			4	3	2
			16	4	2
			6	1	2
Total	1				6
57			2	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
Total					6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.1					
			2	1	3
			3	2	4
			2	1	1
Total					3
58.2					
			3	1	1
			1	1	1
Total					2
58.3					
			3	2	1
			3	4	4
			1	1	1
Total					3
58.4					
			3	2	2
			1	1	1
Total					2
58.5					
			1	1	1
Total					1
58.6					
			4	2	4
Total					1
59.1					
			2	1	1
Total					1
59.2					
			2	1	1
			4	1	1
			4	1	2
Total					3

CONFIDENTIAL

B-11822

PENETRATIONS OF SHELLS IN PANELS					LOT NUMBER	DATE 14 Apr 53					
PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT					FIRING REC. NUMBER						
SOVIET IN PANELS WITH RADIUS OF 30° AND FEET					PRIORITY NUMBER						
					xxxxxx Sheet 7 of 13						
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.3			4	2	2	61.1	6	3	1	1	1
Total					1		3	3	5	2	4
									1	1	1
59.4	7	3	2	1	2				1	1	1
Total	1				1	Total	2				4
59.6	9	5				61.2	30	21	4	2	2
Total	1								1	1	1
									4	2	2
60.1			3	2	2	Total	1				3
			1	1	1						
Total					2						
						61.3	16	10	2	2	2
							6	4	1	1	1
									4	4	6
									2	1	1
Total					3	Total	2				4
60.3			1	1	1	61.5			3	2	4
			3	1	1				3	1	2
			1	1	1				5	3	2
			1	1	1	Total					3
			2	1	2						
Total					5						
						61.6	24	6	1	1	1
							20	14	1	1	1
									1	1	1
Total					5	Total	2				3
60.4	16	16	2	1	2	62.1	5	4			
Total	1				1	Total	1				
60.6			4	2	5	62.2			4	1	2
			5	3	4				1	1	1
			1	1	1				2	2	2
Total					3				1	1	1

CONFIDENTIAL

OROBG-737 1A FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

B-11722

DATE 14 Apr 53

PENETRATIONS OF SHELL 122MM, OF-471N LOADED TNT

Soviet
IN PANELS WITH RADI 10°

30°

AND

FEET

XEROX SHEET 8 of 13

XXXXXX Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.2					
Total				4	
62.3	12	10	5	2	4
			2	1	2
			1	1	1
Total	1			3	
62.4			6	2	4
			2	1	1
			1	1	1
			2	2	2
			6	4	2
			2	2	1
			2	1	1
Total				7	
62.5	8	4	1	1	1
			4	2	2
			1	1	1
Total	1			3	
62.6			3	2	1
			5	3	4
Total				2	
63.1	7	4	8	3	6
			2	1	3
			1	1	1
Total	1			3	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.2	14	5	1	1	1
	9	2	6	4	4
	23	14	1	1	1
	21	21	4	2	3
			2	2	3
			1	1	1
			2	2	3
			1	1	1
Total	4				12
63.3	4	2	1	1	1
			2	1	1
			1	1	1
			4	3	3
			3	2	3
Total	1				5
63.4	25	21	23	3	2
	6	5	1	1	1
			1	1	1
			4	1	3
			3	1	1
			2	1	1
			12	5	4
Total	2				7
63.5			2	1	1
			2	1	1
			4	4	3
			1	1	1

CONFIDENTIAL

ORDN-737 10 FEB 48
FORMERLY SPOTZ-F-48

PENETRATIONS OF SHELLS IN PANELS

R-11822

DATE 14 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet
IN PANELS WITH RADIUS OF 30° AND FEET

LOT NUM
SPRING REG NUMBER

PRIORITY NUMBER

AIR FORCE Sheet 9 of 13

ROCKET Round No. 14

ROCKET NUMBER

PANEL PERFORATIONS PENETRATIONS

NUMBERS LENGTH WIDTH LENGTH WIDTH DEPTH

63.5

Total

4

63.6 20 13 3 2 1

1 1 1

5 3 4

1 1 1

2 2 2

Total

1 5

TOTALS

30° Radius 127 366

PANEL PERFORATIONS PENETRATIONS

NUMBERS LENGTH WIDTH LENGTH WIDTH DEPTH

CONFIDENTIAL

ORDNO-727 10 FEB 48
FORMERLY SPOTI-F-381C O M M A N D E R I C H T
PENETRATIONS OF SHELLS IN PANELS

R-11822

DATE 14 Apr 53

FIRING LINE NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, DP-47IN LOADED TNT

IN PANELS WITH RADII OF Soviet 60° AND

FEET

XXXXXX Sheet 10 of 13

XXXXXX Round No. 14

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
1.2			1	1	1
Total					1
2.2		2	1	1	
Total					1
4.1		3	1	1	
Total					1
7		1	1	1	
Total					1
14		1	1	1	
Total					1
15		2	1	2	
Total					1
17		5	2	1	
Total					1
20		1	1	1	
Total					1
21		2	1	2	
Total					2
25		2	1	1	
Total					2
26		2	1	1	
Total					1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27			3	1	1
			2	1	1
			2	1	4
Total					3
28			5	3	6
			3	2	3
			1	1	1
			2	1	1
			1	1	1
			1	1	1
Total					7
29	30	11	1	1	1
	8	6	3	2	1
			1	1	1
Total		2			3
30	44	14	8	3	2
			1	1	1
			10	3	2
			12	3	5
			4	2	3
			1	1	1
			4	4	2
			2	1	1
			5	4	5
			1		
Total		1			12

C O M M A N D E R I C H T

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B-11822

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ORDSG-737 18 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

Digitized by srujanika@gmail.com

卷之三

DATE 14 Apr 52

四庫全書

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1

PENETRATIONS OF SHELL 122mm. OF-471N LOADED TNT

Soviet

IN PANELS WITH

IN PANELS WITH RADIUS OF 60° AND

~~XXXXXXXX~~ Sheet 11 of 13

~~XXXXXXXXXX~~ Round No. 14

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31	14	6	1	1	1
	21	6	12	8	3
			4	3	2
			4	3	2
			1	1	1
Total		2			5
32	40	11	4	3	3
			1	1	1
			1	1	1
			4	2	2
			2	2	2
			1	1	1
Total		1			6
33	5	2	7	4	8
	8	7	9	4	4
			1	1	1
			12	4	5
			7	4	6
			1	1	1
			1	1	1
			1	1	1
Total		2			8
34	5	4	3	3	2
	11	8	5	3	3
	9	6	6	4	6
	8	2	4	4	5
	6	5	4	3	3
34	6	2	1	1	1
38	20	4	3	8	
			1	1	1
			4	3	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34			4	3	2
			2	1	1
			2	2	2
			3	2	2
			1	1	1
Total		7			14
35	24	10	1	1	1
	6	4	4	3	2
	8	5	1	1	1
	8	4	1	1	1
	12	5	2	1	1
	12	4	1	1	1
	11	5	1	1	1
			2	2	2
			3	2	4
Total		7			9
36	9	6	3	2	2
	6	3	3	2	1
	16	12	3	2	2
	8	3	1	1	1
	14	8	2	2	2
	22	14	5	1	1
			1	1	1
			2	2	1
			2	1	1
Total		6			9
37			1	1	1
			2	2	1
			2	2	1
Total					3

ORDB-737 10 FEB 48
FORMERLY SPOTZ-F-261

PENETRATIONS OF SHELLS IN PANELS

B-118 22

DATE 14 Apr 53

PLOT NO.

FIRING RECORD NUMBER

PRIORITY NUMBER

1000000 Sheet 12 of 13

X X X X X Round No. 14

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 60 FEET AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
38			7	3	6
Total					1
40			7	5	7
			3	2	2
Total					2
42			6	5	10
			6	2	2
Total					2
44			4	2	3
Total					1
45	6	5			
	6	4			
Total		2			
48	12	8	2	1	1
			2	1	1
			3	1	2
			4	2	1
			3	1	1
Total		1			5
48			1	1	1
			3	2	2
			2	2	1
			2	2	2
Total					4
50			4	2	2
			1	1	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50					1
Total					1
51				4	2
			1	1	1
			4	2	5
Total					3
52				1	1
			3	2	2
Total					2
53				6	3
Total					1
54	5	4	6	2	1
			2	1	1
Total		1			2
55				2	2
Total					1
56				1	1
Total					1
57				7	4
Total					1
58.2				2	2
Total					1
58.3				6	3
Total					1

R-119252

ORDB-727 19 FEB 48
FORMERLY SPOTZ-F-291

PENETRATIONS OF SHELLS IN PANELS

LOT NUM [REDACTED] DATE 14 Apr 58

FIRING REC. NUMBER

PRIORITY NUMBER

XXXXXX Round No. 14

XXXXXX Sheet 13 of 13

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet
IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.1			4	4	1
			1	1	1
Total					2
59.3			5	2	1
			1	1	2
Total					2
60.2	24	14			
Total	1				
60.3	12	10			
Total	1				
61.2	16	10			
Total	1				
61.3			4	3	6
			5	3	4
			4	3	2
			4	4	3
			1	1	1
			2	1	1
Total					6
62.1			2	2	1
Total					1
62.2	8	5	7	4	2
			2	2	1
Total	1				2
62.3			3	2	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3			2	2	1
			1	1	1
			2	2	2
			2	2	2
			1	1	1
Total					9
63.1	19	14	1	1	1
	17	8	4	3	3
			2	1	1
Total	2				4
63.2	8	3	2	1	1
	24	20	3	1	3
			4	2	2
			1	1	1
			5	2	3
			5	3	3
			5	3	3
			2	1	1
Total	2				1
63.3			2	1	1
			7	3	7
			2	2	1
			2	1	1
Total	2				4
TOTALS					
60' Radius	40				163

CONFIDENTIAL

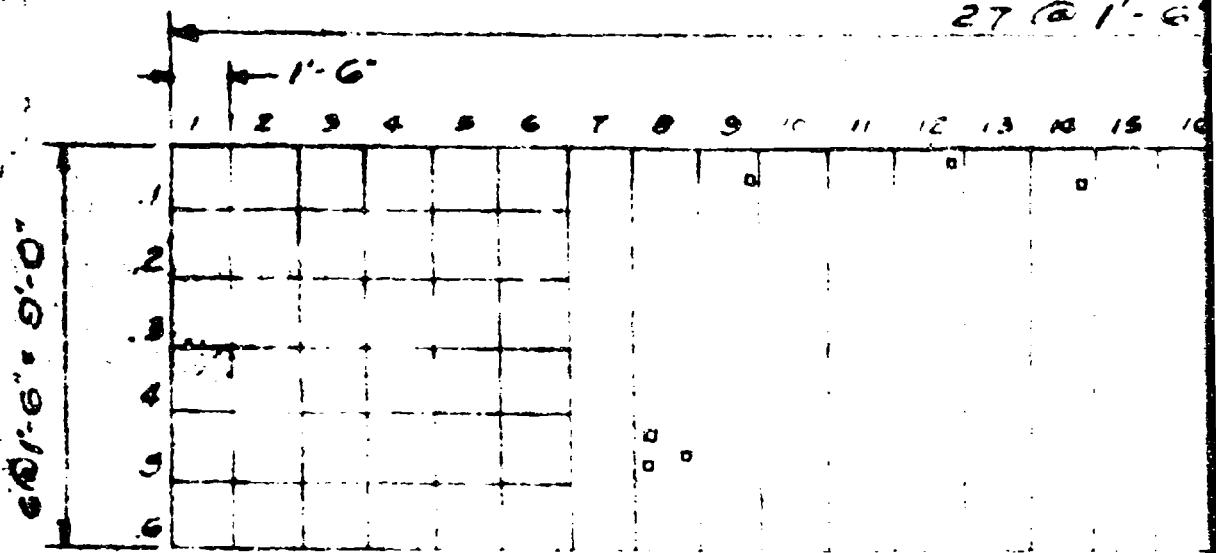
B-11822

1

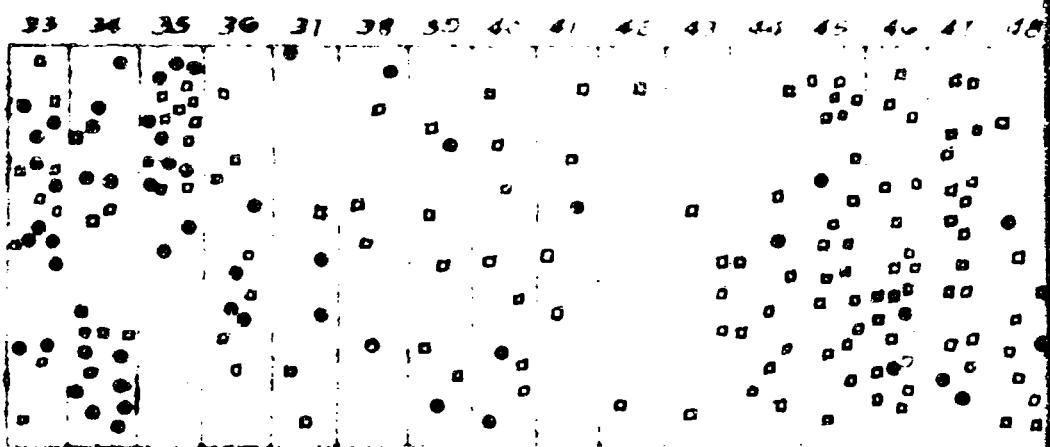
CONFIDENTIAL PANEL

30 FT RADIUS

27 @ 1'-6"



3510 1'-6"



1" NO. 3 PINE BOARDS (PALEWOOD) PL

DATE 4-14-53 RD.NO. 14 PERFORATIONS.

SHELL 122 MM SOVIET PENETRATIONS.

SUSPENSION HORIZONTAL

CONFIDENTIAL

2

JEL A

Radius 180° arc

E 1 - 6 *

15

~~8 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32~~

176

A scatter plot with a horizontal dashed line at y=50.

The x-axis ranges from 0 to 100, and the y-axis ranges from 0 to 100.

Data points are represented by small black squares and larger black circles.

PL-35812 VENICE, FLA.

IONS 127

IONS 366

RANGE CONVERSION SECTION

Effect of angles

四百一

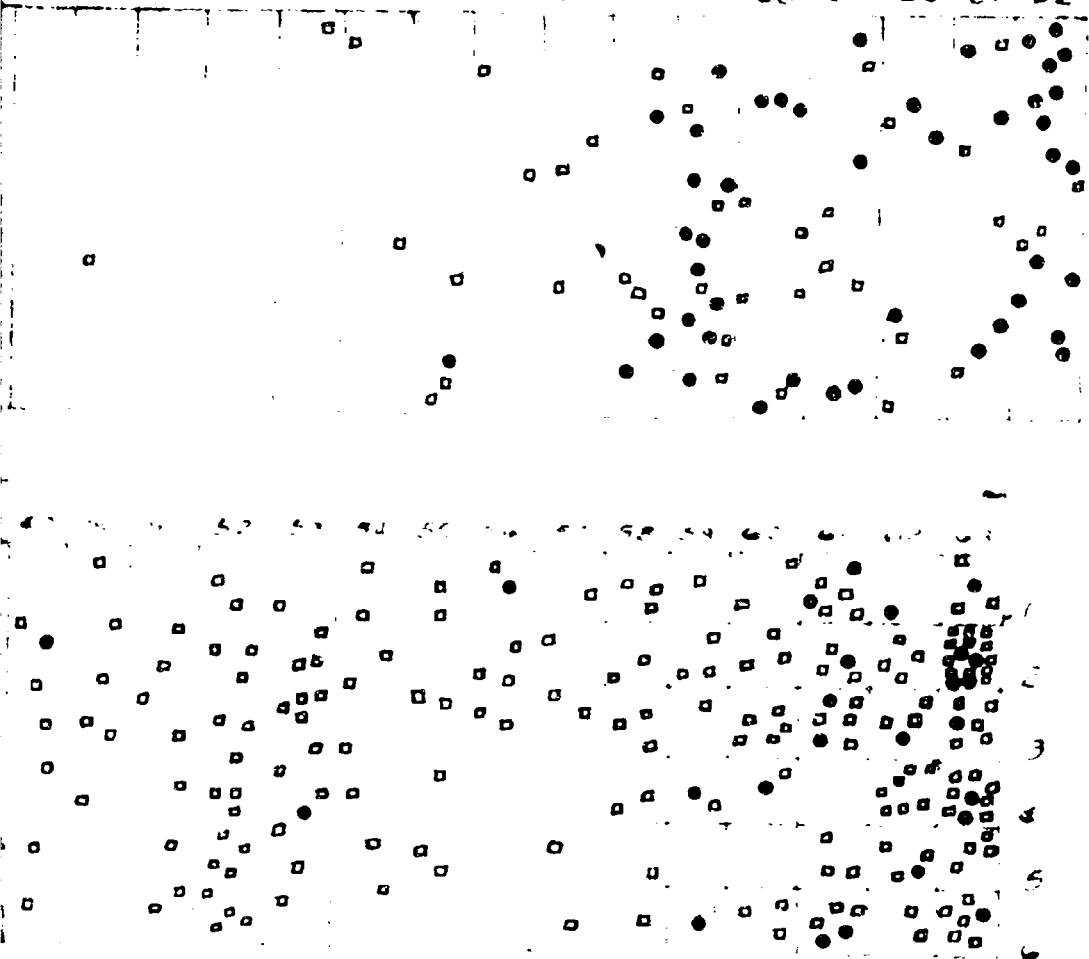
ANNUAL AND DAILY ROTATION
OF EPIGAEA
IN THE FOREST

180° ARC

15°

F2

7 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



GOOD VFA IN 40% ✓

127 •

RANGE OPERATING SECTION

366 □

NO CUT OF CHANNELS

FOR

NUMBER AND POSITION
OF FRAGMENTS
(20 FT LENGTHS)

SECTION 1000000 NO 100
WED 1986 1000000 1000000

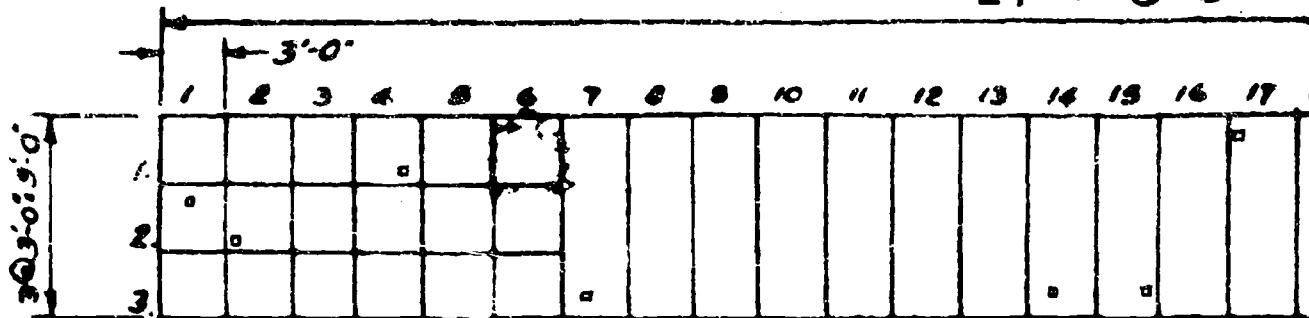
145

B-1182-2

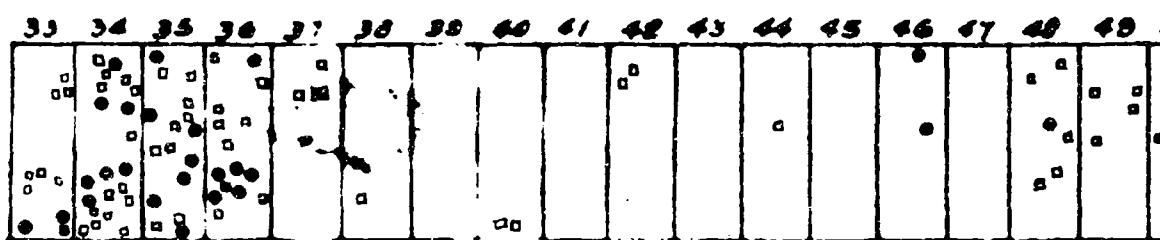
PANEL B

~~80 FT. RADIUS K~~

27 @ 3'-0"



35@ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACE

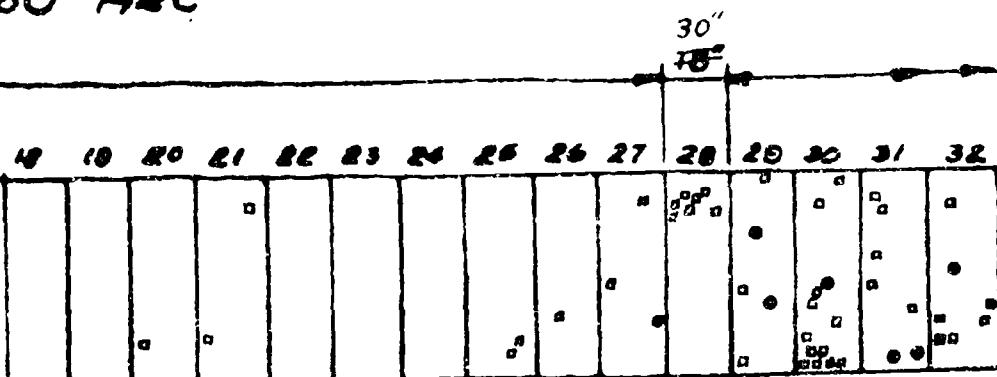
DATE 4-14-53 RD. NO. 14 PERFORATIONS 40

SHELL 122 MM SOVIET PENETRATIONS 163

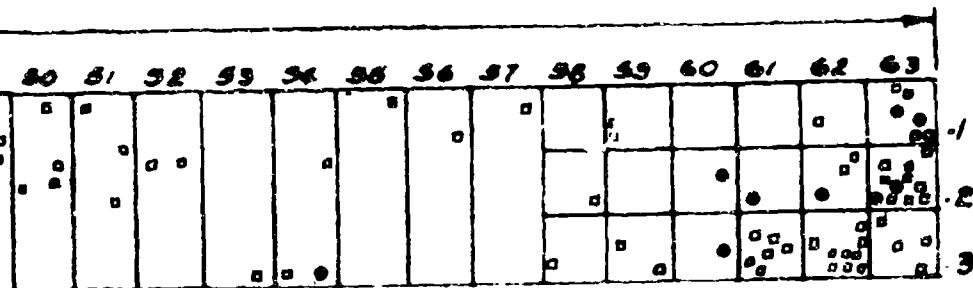
SUSPENSION HORIZONTAL

CONFIDENTIAL

100° ARC



2



ED VERTICALLY.

RANGE OPERATIONS SECTION

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

27B

ABERDEEN PROVING GROUND, MD.
OCT 27, 1944 ADG 11876-14 PR

(3) (3)

TEST REPORT NO. P-11822
PAGE ONE OF THREE

ROUND NO. 15

24 April 1962

SHELL, HE, 105mm, Service
MODEL, OF - 471N, (1961)

SHELL ANALYSIS

DATA

105
471N
1961
105mm
Service

DATA

105mm
Service
Model
471N
1961

Weight of Shell w/o propellant = 54.01 lbs.
w/ prop = 59.77 lbs.

Distance from Shell to the center of the 105mm hole in block target = 22.67 ft.

Shell before hitting block = 10.00 ft. above ground.

Because of the nature of the test, the initial velocities are shown in
Table I.

CONFIDENTIAL

[REDACTED]

B-11824
CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, HE, Soviet, 122mm .TNT Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 24 April 1953Distance from detonation point to target 22.67 feet. Found No. 15

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	3		17	N.R.		33	N.R.	
2	N.R.		18	1	2781	34	25	
3	5	2997	19	54	3345	35	433	2076
4	24		20	22	3115	36	183	2105
5	277	3245	21	180	2257	37	173	2105
6	27		22	2	2938	38	744	2257
7	4		23	24	3115	39	N.R.	2938
8	N.R.	3245	24	586	3313	40	2	
9	4		25	24	3313	41	N.R.	
10	3		26	04		42	N.R.	
11	N.R.	3054	27	60	3513	43	517(2)	2105
12	316	3115	28	2	3313	44	60	2022
13	13		29	N.R.	3245	45	3	
14	82	3386	30	24	2995	46	50	
15	11	3313	31	67(2)	3178	47	N.R.	
16	183	3313	32	52		48	N.R.	

Average velocity 2932 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 4.2 % for the highest velocity and \pm 3.3 % for the lowest velocity.Sheet 1 of 26

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B-1182-1

FRAGMENT VELOCITY DATA

Test of Shell, HE, Soviet, 122mm

Side Recovery Box Data

Proof Director Mr. O. L. RogersDate Fired 24 April 1953Distance from detonation point to target 22.67 feet. Round No. 15

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	1		65	51	2639	81	23	3115
50	N.R.		66	18		82	0+	2938
51	N.R.		67	4		83	3	
52	1		68	1		84	1	
53	122		69	9		85	N.R.	
54	22	2371	70	2		86	517(2)	3241
55	N.R.		71	3				
56	2		72	32				
57	4		73	96	*			
58	N.R.		74	548(2)				
59	82		75	7				
60	823(2)		76	N.R.	3313			
61	58		77	15				
62	41		78	1651(2)	3245			
63	8		79	62	3054			
64	136		80	N.R.	3178			

Average velocity 2952 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 4.2 % for the highest velocity
and \pm 3.3 % for the lowest velocity.Sheet 1 of 26

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ORD-94-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS

R-1182

PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

IN PANELS WITH RACI OF Soviet

30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FEET
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
1.1			1	1	1	
Total					1	
3.1			1	1	1	
Total					1	
4.1			2	1	2	
			2	1	1	
Total					2	
4.4			2	1	1	
Total					1	
4.5			1	1	1	
Total					1	
4.6			1	1	2	
Total					1	
5.2			1	1	1	
			1	1	1	
			2	1	3	
Total					3	
5.3			1	1	1	
Total					1	
5.6			1	1	3	
Total					1	
6.4	1	1				
Total		1				

CONFIDENTIAL

XXXXXX Sheet 1 of 18

XXXXXX Round No. 15

XXXXXX SHEET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
6.5	1	1	2	1	2
Total		1			1
7			1	1	1
			1	1	2
Total					3
8			1	1	2
			2	1	3
			1	1	4
Total					3
9			2	2	2
			1	1	2
			2	1	2
Total					4
10			1	1	2
			1	1	2
Total					2
11			2	2	5
Total					1
13			4	3	2
			1	1	2
Total					3

OROOG-287-10 FEB 48
FORMERLY SPOTZ-F-281

CONFIDENTIAL

13-11722

DATE 24 Apr 53

FILED 1948 MAR 24 W-187

FIRING RECORD NUMBER

PRIORITY NUMBER

XXX-XXXXX Sheet 2 of 18

XX-XXXXXX Round No. 15

POCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet 30° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
14			3	2	2
Total					1
15			2	1	5
Total					1
16	2	1	2	2	4
			4	2	3
Total	1				2
17			2	2	3
			2	1	2
			2	1	3
			2	1	7
			3	2	9
			4	1	11
			4	2	4
			1	1	4
Total					8
18		1	1	5	
		1	1	2	
		1	1	3	
		1	1	1	
		4	2	8	
		1	1	1	
		2	1	4	
Total					7
19		1	1	2	
		2	2	2	
Total					2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
20				1	1
				2	1
				4	2
				20	8
Total					4
22	2	1	4	1	7
			2	1	9
			1	1	7
			1	1	1
Total	1				4
23				1	1
				1	1
Total					2
24				3	1
				1	1
Total					2
25	3	3	2	2	4
	7	5	1	1	2
	7	3	3	2	4
	11	9			
Total	4				3
26	3	3	2	2	2
	8	6	1	1	2
			2	2	2
			2	1	1
Total	2				5

ORDB-737 19 FEB 48
FORMERLY SPOTC-F-20

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471 LOADEDTNT

Soviet

IN PANELS WITH RADII OF 30 FEET AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27	4	2	1	1	3
	5	2	1	1	2
		1	1	1	3
		2	2	2	7
		2	1	6	
		4	2	7	
		3	2	4	
		4	3	3	
		1	1	1	
		2	2	10	
Total		2			10
28	7	4	2	1	4
	3	3	3	3	7
	8	5	2	1	2
	4	3	1	1	2
	4	2	1	1	3
	6	3	1	1	1
	5	2	2	1	2
	12	4	3	2	4
	4	3	2	1	1
		3	3	7	
Total		9			10
29	22	6	1	1	2
	4	2	1	1	4
	16	6	3	2	10
	12	4	1	1	1
	8	3	2	1	4
	36	9	3	1	5
	4	4	1	1	1
	7	5	1	1	1
	7	2	1	1	5
	14	5			

LOT NUMBER

DATE 24 Apr 53

FIRING POSITION NUMBER

PRIORITY NUMBER

XXXXXX Round No. 18

XXXXXX Sheet 3 of 18

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	16	5			
	10	7			
Total		12			9
30	3	3	2	1	3
	7	4	1	1	4
	3	2	1	1	4
	12	5	2	1	2
	4	4	1	1	2
	20	15	2	2	7
	12	4	2	2	2
	5	3			
	3	2			
	16	4			
	32	10			
	20	8			
#	12	8			
	25	24			
	7	2			
	3	2			
Total		16			7
31	4	3	2	1	1
	7	5	2	2	4
	21	7	5	2	3
	3	3	1	1	3
	16	9	2	1	7
			1	1	2
			1	1	2
			1	1	3
Total		5			8

CONFIDENTIAL

B-1182-1

CONCERNED

GUNNERS-337 10 FEB 68
FORMERLY GUNNERS 7-281

DATE 24 Apr 68

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122MM, OF-471 LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

FIRE NUMBER

FIRING ORDER NUMBER

PRIORITY NUMBER

XX-XXXXXX Round No. 15

XX-XXXXXX Sheet 4 of 18

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32	3	3	3	1	7
	6	6	3	2	4
	9	8	1	1	2
	8	2	1	1	3
	6	3	3	1	2
	2	1	3	1	6
	20	8	3	1	3
	6	3	2	1	3
	6	4	1	1	2
		1	1	1	
		1	1	1	
		2	1	1	
		3	2	5	
		2	2	5	
		4	2	2	
Total	9		15		
33	4	3	4	2*	3
	7	7	1	1	1
	32	12	1	1	2
	14	7	1	1	3
	8	6	3	1	2
	7	3	4	4	3
	3	3	1	1	1
	24	7	1	1	1
	4	3	1	1	1
	7	3	2	1	2
	4	4	4	2	10
	17	8	2	2	5
	7	5	2	1	1
	9	5	2	2	3
	6	3	1	1	4
	9	4	1	1	2
	7	5	2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33	48	14	1	1	2
	2	2			
Total		19			18
34	21	10	1	1	6
	8	7	1	1	2
	5	3	2	2	5
	4	2	1	1	1
	15	7	2	1	8
	6	4	3	1	6
	32	14	1	1	2
	1	1	5	3	6
	42	8	1	1	1
	64	16	2	1	6
	33	8			
	12	4			
	4	4			
	4	3			
Total		14			10
35	6	3	1	1	2
	3	1	1	1	2
	12	8	1	1	3
	4	3	3	1	1
	17	9	4	1	4
	17	6	3	1	2
	42	12	2	2	1
	4	3	3	1	5
	3	1	1	1	1
	12	5	1	1	1
	15	9	5	1	3
	18	11	1	1	1
	12	7	1	1	2
	5	4	2	2	5

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	7	3	1	1	1
	11	7	3	2	7
	16	9	2	1	1
	8	2	4	2	7
	7	3	5	4	5
	32	16	3	1	3
	8	2	1	1	4
	2	2	2	2	2
		1	1	3	
		1	1	3	
		1	1	1	
		1	1	3	
		1	1	3	
		1	1	2	
		2	1	3	
		1	1	1	
Total	22		6	30	
36	26	10	1	1	2
	19	9	1	1	4
	5	3	6	3	3
	5	3	1	1	2
	14	5	2	1	3
	25	8	5	2	8
	7	4	3	1	4
	4	2	3	1	2
	19	7	1	1	2
	8	6	1	1	1
	7	3	1	1	1
	31	8			
	7	7			
	8	4			
	11	7			
	24	11			

CONFIDENTIAL

LOT NO.	DATE 24 Apr 53
FIRING NUMBER	
PRIORITY NUMBER	
XXXXXX Sheet 5 of 18	
XXXXXX Round No. 15	
ROCKET NUMBER	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36	7	4			
	5	2			
	4	4			
	26	12			
Total	20				11
37	5	3	3	2	4
	12	4	1	1	2
	17	5	6	1	3
	4	4	1	1	2
	1	1	1	1	1
	1	1	1	1	2
	2	1	1	2	
	4	4	4	4	
	1	1	1	1	
	2	2	2	2	
Total	1	1	1	1	2
38			2	1	2
			1	1	1
			2	2	2
			2	2	3
			1	1	2
			3	1	3
			2	1	2
Total					7
39	12	8	2	1	2
	18	7	3	2	5
Total	2				2

ORDERS-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

13-11-22

DATE: 24 Apr 53

PENETRATIONS OF SHELL 122MM, OF-471 LOADED TNT

Soviet

IN PANELS WITH RADIUS OF

30°

AND

FEET

LOT NUMBER

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 6 of 18

XXXXXX Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40	16	12	1	1	1			4	3	5	
		12	5	3	1			1	1	4	
			2	2	2			2	1	2	
			3	3	5			2	1	1	
			3	2	2			1	1	2	
			1	1	1			2	2	2	
Total		2			6			1	1	2	
								3	2	2	
41	4	3	1	1	1	Total	1				14
		14	12	2	1						
		13	12	1	1	3					
Total	3				3						
42	5	3	4	3	7			5	2	6	
			2	1	1			3	2	2	
			1	1	1			2	2	1	
			2	1	1			3	1	1	
			1	1	2			5	3	2	
			2	1	3			1	1	1	
Total	1				6			1	1	1	
								2	2	1	
43		2	1	5		Total	2				12
		2	1	4							
		1	1	1							
		3	2	3							
		2	2	2							
Total					5						
44	6	4	2	1	1			3	2	3	
			4	2	7			2	1	1	
			1	1	1			1	1	2	
			5	3	3			1	1	3	
			3	3	2			1	1	2	
			2	1	1			4	4	4	
Total	6	4	2	1	1						8

13-11-22

PRINTED ON 13 APR 53

GROS-737 10 FEB 46
FORMERLY SPOTZ-F-291

PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT
Soviet

IN PANELS WITH RADII OF 30° AND

ROT N.
E. P. T. S. NUMBER
PRIMARITY NUMBER
XXXXXX Round No. 15
Sheet 8 of 18
WILLET N.W. 15

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FEET
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
51 cont			1	1	2	
			3	2	6	
			2	2	1	
			3	1	4	
			4	4	3	
			1	1	1	
			3	2	2	
			1	1	1	
			2	2	2	
			5	2	3	
			3	1	1	
			1	1	3	
			1	1	1	
			2	2	1	
			2	1	1	
			1	1	1	
			2	1	1	
			1	1	1	
			1	1	2	
			2	1	1	
			1	1	1	
			1	1	1	
			2	2	1	
			1	1	1	
Total	2		29			
52	4	3	2	2	3	
			2	2	2	
			2	1	1	
			2	1	1	
			2	1	1	
			2	2	2	
			1	1	1	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FEET
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
			3	3	5	
			1	1	1	
			1	1	1	
			6	4	6	
			2	2	2	
			2	1	1	
			5	5	4	
			1	1	1	
			2	2	2	
			1	1	2	
			1	1	1	
			5	2	5	
			2	1	3	
			1	1	1	
Total	1		22			
53	14	8	1	1	3	
	4	3	2	2	2	
			2	2	2	
			2	2	2	
			2	2	6	
			6	2	6	
			1	1	2	
			2	2	2	
			1	1	1	
			3	2	4	
			1	1	2	
			2	1	2	
			1	1	1	
			1	1	2	
			5	4	3	
			2	2	1	
Total	2		16			

CANNISTER TRAIL

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-20

PENETRATIONS OF SHELLS IN PANELS

A-1172, L

DATE 24 Apr 53

PENETRATIONS OF SHELL 120mm OF-471 LOADED TNT

Soviet
IN PANELS WITH RADIU OF 30' AND FEET

LOT NUMBER

FIRING RECORD NUMBER

PRIORITY NUMBER

XEROX NUMBER Sheet 9 of 18

XEROX NUMBER Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
54	8	7	2	1	3
	3	2	3	1	6
	3	1	1	1	1
		1	1	1	1
		2	2	2	
		1	1	2	
		2	1	1	
		3	1	2	
		1	1	1	
		1	1	2	
		1	1	1	
		3	1	1	
		1	1	2	
		1	1	2	
		2	2	11	
		2	2	1	
		4	3	2	
		3	1	7	
		4	3	3	
		1	1	1	
		1	1	2	
		1	1	1	
		1	1	2	
		1	1	1	
		3	3	5	
		2	2	1	
		2	1	2	
Total	3			27	
55		3	2	2	
		1	1	1	
		1	1	2	
		2	2	3	
		1	1	2	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
				4	2
				1	1
				5	2
Total					8
56				1	1
				2	1
				6	3
				1	1
				3	2
Total				2	1
					6
57				1	1
				2	1
				2	2
				1	1
Total					4
58.1				1	1
				4	2
				1	1
Total					3
58.3				1	1
Total					1
58.4				4	2
Total					1
58.5				2	1
				1	1
				1	1
				3	2
					8

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FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

17-1182-4

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED THIS

Soviet. IN PANELS WITH RADIUS OF 30' AND

FEET

LOT NUMBER
FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 10 of 18

XXXXXX Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.5					
Total					4
59.1		1	1	1	2
Total					1
59.2	1	1	1	1	1
			2	2	2
Total		1			2
59.3	5	3	3	2	4
			1	1	1
Total		1			2
59.4			3	2	9
Total					1
59.5			1	1	1
			1	1	1
Total					2
59.6	9	5	1	1	2
Total		1			1
60.1			2	1	2
			1	1	1
			2	1	1
Total					3
60.2	22	14	2	2	3
			2	2	2
			1	1	2
			1	1	2
Total		1			4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.3	5	2	4	2	5
			9	7	3
			1	1	2
Total					3
60.4			1	1	2
			1	1	1
Total					2
60.6			2	1	2
Total					1
61.1	5	4	1	1	1
Total			1		1
61.2			1	1	1
			5	4	9
			1	1	2
			1	1	1
Total					4
61.3	7	5	2	2	2
Total			2	2	2
61.4	21	20	3	1	2
			1	1	2
			1	1	2
Total			1		3
61.5			1	1	3
			6	2	6
			1	1	2
Total					2

ORDBG-737 10 FEB 48
FORMERLY SPOTS-P-281

PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT
IN PANELS WITH DII OF 30' AND FEET

Soviet

PENETRATIONS

FILE NUMBER

FIRST RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 11 of 18

XXXXXX Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH	
	LENGTH	WIDTH	DEPTH	FEET	
51.6	11	6	3	2	3
Total		1			1
62.1		5	1	2	
		4	3	2	
		1	1	1	
Total				3	
62.2	2	1	1	1	2
		3	3	7	
		1	1	1	
Total		1		3	
62.3	15	9	4	2	9
	25	3	1	1	2
	10	7	1	1	1
		1	1	2	
Total		3		4	
62.4		2	1	3	
		1	1	2	
Total				2	
62.5	12	10	4	2	10
		2	2	2	
		1	1	1	
		1	1	1	
		5	2	2	
Total		1		5	
62.6	3	3	3	2	7
	12	8	5	3	?
	24	10	2	2	1
Total		3		1	3

PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH
	LENGTH	WIDTH	DEPTH	
63.1		5	3	3
Total		1		2
63.2			3	2
			2	2
			3	2
			1	1
Total			7	3
63.3	23	8	1	1
	7	2	2	1
		3	2	1
		1	1	2
		1	1	1
Total			1	1
63.4		6	5	6
	14	4	2	2
		1	1	1
		6	3	8
		2	1	1
Total		2		5
63.5	30	16	1	1
		1	1	1
		1	1	1
		1	1	1
Total			1	1

A-118274

ORDBG-737 10 FEB 48 FORMERLY SPOTZ-F-281						LOT NO.	DATE 24 Apr 53				
PENETRATION OF SHELLS IN PANELS						VIRGIN RECORD NUMBER					
PENETRATIONS OF SHELL 122mm, OF -471 LOADED TNT Soviet						PRIORITY NUMBER					
IN PANELS WITH RADIUS OF 30° AND FEET						X5000000 Sheet 12 of 18					
						S5000000 Round No. 15					
						ROCKET NUMBER					
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
63.5											
Total		1			4						
63.6		1	1	3							
		2	2	2							
Total				2							
TOTALS											
30° Radius	187			532							
RECORDED BY [REDACTED]											
ARMY - US - ABERDEEN PROVING GROUND - MD - 445											

13-1120-2

PENETRATIONS OF SHELLS IN PANELS						DATE 24 Apr 53
						PART NUMBER
						FIRING RECORD NUMBER
						PRIORITY NUMBER
						X0000xx Sheet 13 of 18
						XX000xx Round No. 15
						ROCKET NUMBER
PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT						
Soviet IN PANELS WITH RADIUS OF 60° AND FEET						
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
1.1			4	1	2	
Total					1	
1.2			3	1	1	
			1	1	1	
Total					2	
2.2			2	1	1	
			1	1	1	
			1	1	1	
Total					3	
2.3			1	1	2	
Total					1	
3.1			1	1	1	
Total					1	
3.2			2	1	3	
			1	1	1	
			1	1	1	
			1	1	1	
			1	1	2	
Total					5	
3.3			1	1	2	
			1	1	1	
			1	1	1	
Total					3	
4.2			5	2	1	
Total					1	
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
4.3					1	
Total						1
6.2					1	1
					1	1
					2	1
Total						3
7					4	1
Total						1
9					4	3
					2	2
					1	1
					1	1
Total						4
10					1	1
Total						1
16					3	1
					2	1
Total						2
17					1	1
Total						1
18					2	1
Total						1
20					1	1
					2	1
Total						2

DROSS-737 10 FEB 48
FORMERLY SPOTZ-P-291

PENETRATIONS OF SHELLS IN PANELS

DATE 24 Apr 58

PENETRATIONS OF SHELL 122MM, OF-471 LOADED TNT

SOVIET
IN PANELS WITH RADIUS OF

60'

AND

FEET

LIT NUMBER

REPORTING RECORD NUMBER

PRIORITY NUMBER

xxxxxxxxx Sheet 14 of 18

xxxxxxxxx Round No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
21			7	2	1
Total					1
23		1	1	2	
		4	2	3	
Total					2
25		3	2	2	
		2	1	2	
		1	1	1	
Total					3
26		3	2	2	
		1	1	1	
		4	3	2	
		2	1	1	
		3	2	1	
Total					5
27	13	2	5	3	5
		4	2	1	
		4	2	3	
		3	2	2	
		4	3	6	
		5	3	2	
		4	3	4	
		2	2	2	
Total	1				8
28	9	6	1	1	1
		3	2	5	
		4	1	1	
Total	1				3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
29	36	6	5	3	2
			3	2	2
			2	2	2
Total		1			3
30	3	2	2	1	1
	13	3	3	1	1
	8	4	5	4	6
	10	5	2	1	2
	10	4	3	2	2
			3	2	1
Total		5			6
31	35	7	4	2	2
	7	4	6	2	1
	22	7	1	1	1
	7	3			
			12	9	
	43	7			
	8	6			
	30	11			
	4	3			
Total		9			3
32	4	3	3	2	2
	9	4	1	1	1
			4	2	2
			3	2	3
			2	1	3
Total		2			5
33	10	5	2	1	1
	48	10	3	2	1
	26	7	4	3	2

C-100 JOURNAL DRAFT

AFC

ORDBG-737 18 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

B-1182-2-

PENETRATIONS OF SHELL 122mm. OF-471 LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 60°

TEST NUMBER 62

LOT NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

Sheet 15 of 18

Round No. 15

PROJECT NUMBER

AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	8	3	8	3	5
	9	7	5	4	3
	3	2	1	1	1
	6	5	3	2	1
	8	6	3	1	1
	7	5	16	5	4
Total		9			9
34	62	16	2	2	1
	15	9	3	1	2
	10	5	2	2	2
	16	15	2	1	1
	5	4	3	1	2
	5	3	1	1	1
	14	9	5	3	5
	7	4	2	2	6
	18	14			
	24	8			
Total		10			8
35	20	8	2	2	3
	24	11	5	3	6
	8	6	3	2	1
	9	6	8	2	3
	5	4	1	1	1
	7	3	2	2	2
	8	7	4	3	6
	4	4			
	23	8			
	32	27			
	21	9			
	8	5	CORROBORATED	7	
Total		12			7

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36	10	4	3	2	1
	12	5	4	2	3
	8	7	4	4	6
	15	9	4	2	2
	9	4	4	2	3
	12	5	2	1	2
			4	3	2
Total		6			7
37	16	6	1	1	1
			3	2	2
			4	2	1
			3	1	1
			3	1	1
Total		1			5
38	12	10	12	10	6
	10	5	4	2	2
			3	2	3
			1	1	1
			8	3	10
Total		2			5
39	9	5	4	3	4
			12	8	6
			4	3	7
			5	3	2
Total		1			4
40	12	11	3	2	2
	11	6	1	1	1
	8	4	3	3	4
	12	10			11
Total		4			3

ORDB-787 10 PER 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT
Soviet

IN PANELS WITH RADII OF 60°

AND

PILOT NUMBER

DATE 24 Apr 58

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXXSheet 16 of 18

XXXXXXRound No. 15

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FEET
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
41	8	5	4	2	2	
			7	4	7	
Total		1			2	
42			5	4	4	
Total					1	
43			4	2	3	
			4	3	2	
			5	4	2	
Total					3	
44			1	1	1	
			2	1	2	
			2	1	1	
			5	4	2	
Total					4	
45			5	3	1	
			1	1	1	
			2	1	1	
			5	4	2	
Total					4	
46			4	2	2	
Total					1	
47	9	5	3	1	1	
Total	1				1	
48	12	9	2	1	1	
			2	2	1	
			4	3	1	
			4	2	2	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
					4	2
					3	2
Total		1				6
49	6		4	3	2	1
			2	1	1	
Total		1				2
50	10	9	3	2	2	
	7	4	4	3	3	
			3	2	2	
Total	2					3
51	9	3	5	2	3	
	3	5	4	2	3	
			2	1	2	
Total	2					3
52			5	4	4	
			3	2	2	
			5	1	6	
			2	2	1	
Total			2	1	2	
						5
53			2	3	2	
			3	3	3	
			5	2	2	
			2	2	2	
Total						4
54			7	3	2	
			1	1	1	
						2
Total						

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-201B-1112-2
PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 24 Apr 53

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 17 of 18

XXXXXX Round No. 15

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

Soviet IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55	12	6	5	5	7
			2	1	4
Total		1			2
57			4	4	2
Total					1
58.1	8	4			
	4	4			
Total		2			
59.1	10	7	5	4	4
Total		1			1
59.2			4	2	2
Total					1
59.3	5	3			
Total		1			
60.3			4	3	2
			2	1	2
			1	1	1
			5	3	3
			4	2	3
Total					5
61.1	23	14	1	1	1
			2	1	1
			2	1	1
			1	1	1
Total		1			4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2	7	5			
Total			1		
61.3	14	10	2	1	2
	26	16			
	10	10			
Total		3			1
62.1	10	6	2	1	2
	14	10			
Total		2			1
62.2			2	1	1
			5	3	2
			2	1	2
			4	2	2
			1	1	1
Total					5
62.3			2	1	1
			2	1	2
Total					2
63.1	6	3	3	2	9
	6	3	2	2	2
	12	9	9	2	3
	16	9	1	1	1
Total		20	17		
		21	14		
Total			6		4

CONFIDENTIAL

ORD-84-737 18 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

LUT HUM

DATE 24 Apr 53

PENETRATIONS OF SHELL 122mm, OF-471 LOADED TNT

LOADED TNT

PRIORITY NUMBER

www.vietnam-91

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~~CONFIDENTIAL~~ Sheet 18 of 18
~~CONFIDENTIAL~~ Board No. 15

~~SEARCHED~~ Round No. 15
SEARCHED NUMBER

ROCKET NUMBER

SO
IN PANELS WITH RADII OF

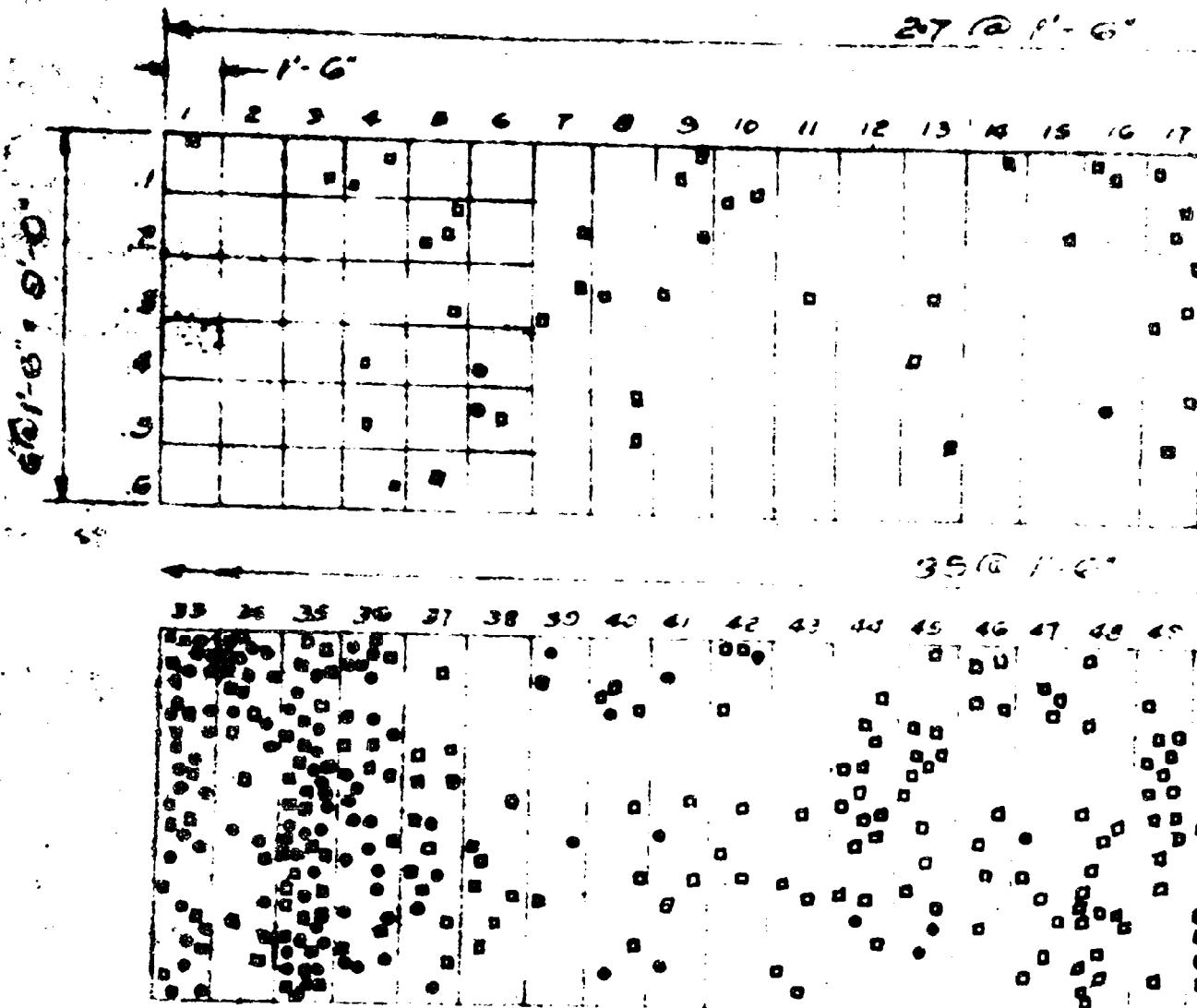
Soviet

IN PANELS WITH RADII OF

60¹ AND

FEET

CONFIDENTIAL PANEL A
30 FT RADIUS



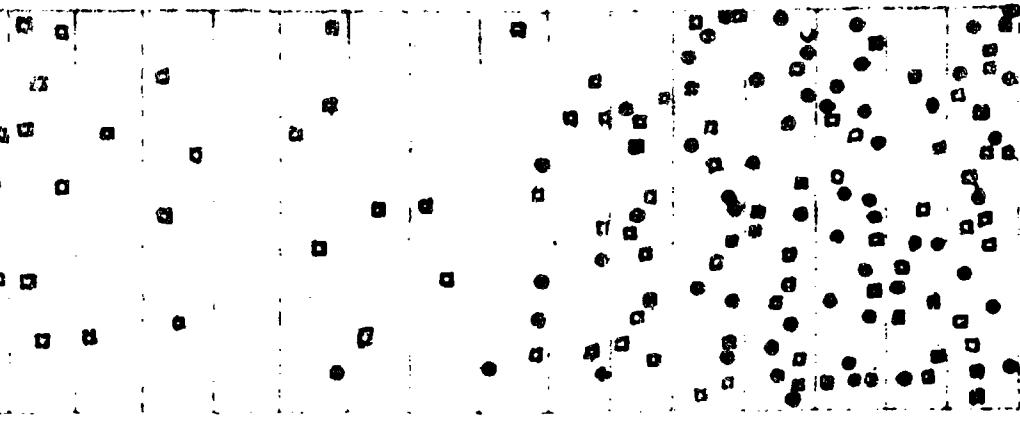
1" NO. 3 PINE BOARDS (OCEANSED) PLACE
DATE 4-24-53 RD. NO. 15 **PERFORATI**
SHELL, 122 MM, SOVIET **PENETRATI**
SUSPENSION: HORIZONTAL

CONFIDENTIAL

180° AEC

18°

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



?

7

ED VERTICALLY

IONS 187

RANGE OPERATIONS SECTION

IONS 532

ASPECT OF CHANNELS

FOR

NUMBER AND DISTRIBUTION

OF FRAGMENTS

(30 FT RADIAL)

181

ABOVE PAGING INFORMATION

10/12/67 1544

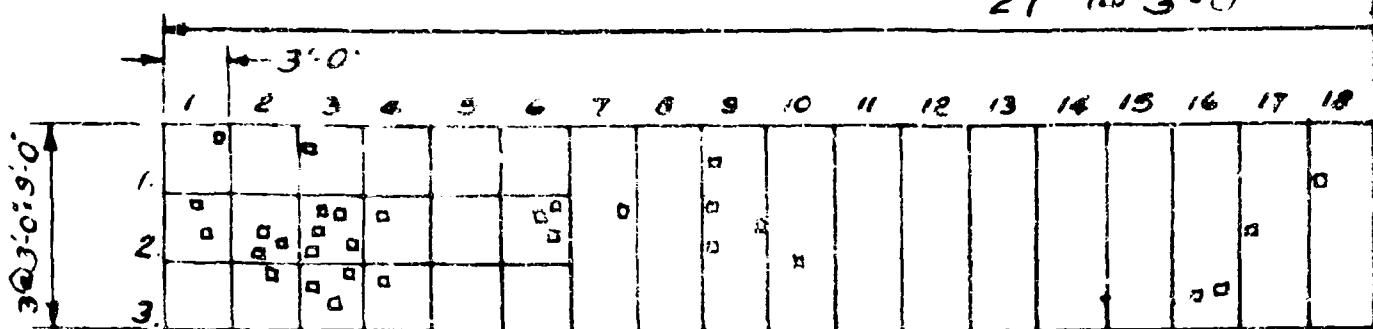
ENCL 1876-15 PER

156

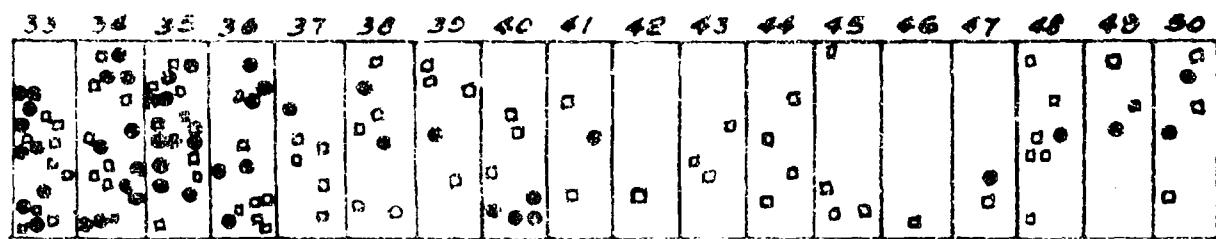
B-11822

PANEL B
60 FT. RADIUS 180

27 @ 3'-0"



35 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 4-24-53 RD. NO. 15

SHELL, 122 MM. SOVIET

SUSPENSION: HORIZONTAL

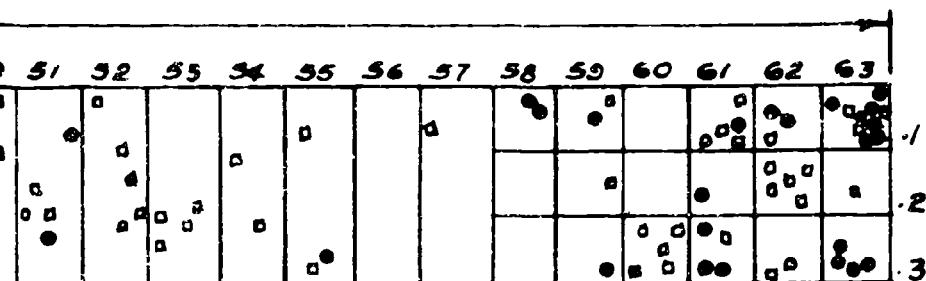
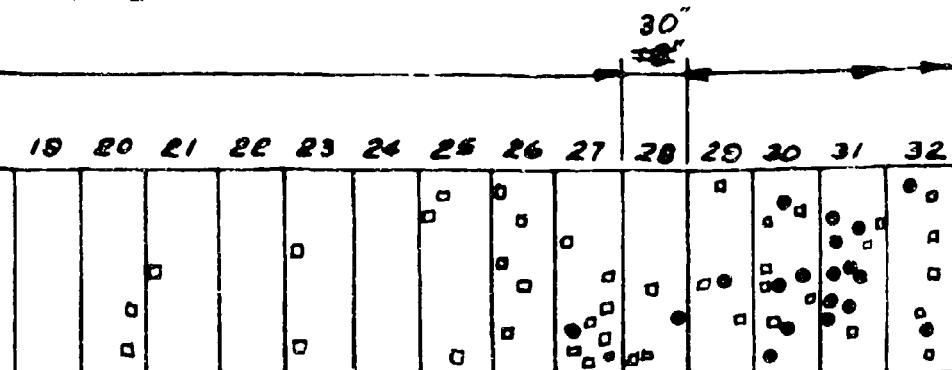
PERFORATI

PENETRATI

122MM SHELL

1

0° ARC



VERTICALLY.

2

IONS 94

IONS 189

RANGE OPERATIONS SECTION

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD.
OCT. 27, 1944 APG 11876-14 P

REF ID: A111.1-21802
PAGE NO. 3

SCHEM. NO. 26

21 May 1953

SHELL, 105 mm, 1000 g.
MATERIAL, 67-47111, v. 1.

SPRING ANGLES

35° 45° 60°

35
32-
122
77

RANGE OF

0° - 101°

101°

109
56 □

Height of Shell w/o Compensation - 10.70 cm.
At Range = 5.74 cm.

Distance from Shell to the center of the 3000' Burdened Flight Target - 20.40 ft.
Shell Velocity at Impact - 1000 ft/sec right to, up 100.

Recommended for use in the other projectile weights and velocities are given in
AFI Circular 10, 60-100.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

FRAGMENT VELOCITY DATA

Test of Shall, HE, Soviet, 122-mm TWT Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 21 May 1953Distance from detonation point to target 23.67 feet. Round No. 16

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	310	2854	17	114		33	N.R.	3393
2	416	2905	18	1		34	N.R.	
3	74	2905	19	459	3274	35	N.R.	
4	13	2957	20	22		36	N.R.	
5	83	2465	21	9	3127	37	60	3544
6	30		22	N.R.	3393	38	35	
7	653(2)	2957	23	21	3393	39	321	
8	7		24	42	3130	40	22	
9	1		25	N.R.		41	9	
10	N.R.		26	14		42	10	
11	11		27	112	3326	43	6	
12	N.R.	3127	28	36	3009	44	216	2093
13	17	3274	29	1		45	34	
14	N.R.		30	16		46	N.R.	
15	102		31	N.R.	2093	47	406	1969
16	140		32	8		48	44	2276

Average velocity 2985 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 4.2 % for the highest velocity
and \pm 3.2 % for the lowest velocity.Sheet 6 of 26

FRAGMENT VELOCITY DATA

Test of Shell, HE, Soviet, 122mm

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 21 May 1953

Distance from detonation point to target 22.67 ft. Round No. 16

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	0+		65	447				
50	N.R.		66	N.R.				
51	N.R.		67	N.R.				
52	1		68	7				
53	N.R.		69	N.R.	3190			
54	13		70	N.R.	3190			
55	12		71	178	3190			
56	N.R.		72	N.R.				
57	56		73	1	3009			
58	N.R.	3067	74	99	3067			
59	806		75	3				
60	24		76	3				
61	10		77	N.R.				
62	22		78	184	3127			
63	533	3190	79	N.R.				
64	959(3)		80	81(2)				

Average velocity 2985 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 4.2 % for the highest velocity and \pm 3.2 % for the lowest velocity.

Sheet 7 of 28

CONFIDENTIAL 51

OCEAN TEST 10 FEB 48
FORMERLY REPORTED AS

PENETRATIONS OF SHELLS IN PANELS

2021 RELEASE UNDER E.O. 14176

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF

30°

AND

FEET

EXPLANATION Sheet 1 of 11

XXV/XXXXX Round No. 16

SECRET NOFORN

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.2			5	1	2
Total					1
3.3		1	1	1	1
Total					1
4.3		4	2	3	
Total					1
5.3		1	1	1	
Total					1
6		7	3	7	
Total					1
11		3	2	6	
Total					1
13		3	3	7	
Total					1
14		3	2	1	
Total					1
18		2	2	3	
Total					1
19		2	2	3	
Total					1
20		1	1	1	
Total	6	10	10	10	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
22					
Total			2	1	1
23					
Total			2	1	7
24					
Total			1	1	1
25					
Total			4	3	7
					1
					1
					2
26	7	3	7	2	8
Total			1		1
27	12	5	3	2	3
			2	1	2
			3	2	6
			1	1	1
			4	2	2
			6	2	4
Total			1		6
28	5	4	1	1	1
			18	3	2
			10	1	1
			5	4	
Total			4		3
29	28	5	2	1	1
			16	2	1
			40	3	1
	4	3			1

PENETRATIONS OF SHELLS IN PANELS

122mm, OF-471X LOADED TNT
Soviet

• 10 FEET OF 30' AND FEET

21 Mar 53

DATE REC'D.

1953, MAR, 21

PRIORITY NUMBER

XXXXXX Round No. 16

XXXXXX Sheet 2 of 11

ROCKET NUMBER

PENETRATIONS		PENETRATIONS		
		WIDTH	LENGTH	DEPTH
	8	3		
		5		3
	4	3	3	2
	5	2	2	1
	4	3	4	3
	10	4	3	1
	22	9	2	1
	46	13		
	8	4		
	3	2		
Total		8		5
	15	4		
	2	1		
	33	6		
	32	7		
	5	5		
	8	4		
		6		
	5	2	1	2
	3	2	2	4
	3	2	1	2
	7	3	1	1
		2	1	2
		3	1	2
		3	2	6
		1	1	2
		1	1	4
		1	1	1
	4			10

PANEL NUMBERS	PERFORATIONS	PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33	25	11	5	1	6
	3	2	2	2	2
	46	12	4	1	5
	6	4	4	1	4
	5	5	2	2	2
	54	10	1	1	1
	8	5	3	2	5
	18	8	2	1	1
Total		8			11
	34	18	4	3	2
	55	9	3	2	5
	9	6	2	1	1
	21	8	1	1	1
	5	3	2	1	1
	11	5	5	2	5
	2	2	4	3	5
	28	10	2	1	1
	11	4	4	2	4
	16	8	3	2	6
	5	4			
	7	4			
	7	6			
	4	2			
	14	9			
Total		15			10
	35	21	20	1	1
	6	4	13	5	5
	5	3	2	1	1
	33	8	1	1	1

ORDNANCE TEST AND PREDICTION SECTION

DATE 21 May 68

PENETRATIONS OF SHELLS IN PANELS

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

XXXXXX Sheet 3 of 11

Soviet

XXXXXX Round No. 16

IN PANELS WITH RADIUS OF 30° AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35	4	3	3	2	2
	33	11	2	1	1
	22	12	5	2	3
	7	3	2	1	2
	7	4	4	3	2
	22	8	3	1	1
	12	3	1	1	1
	4	3			
	4	4			
	7	4			
	4	3			
	26	13			
Total	18		11		
36	6	4	2	1	3
	5	4	2	2	2
	6	4	3	2	6
	4	3	2	1	1
	3	2	1	1	1
	22	13	3	1	1
	4	3	1	1	1
	16	10			
	18	10			
	5	4			
	21	14			
	3	1			
	3	12			
Total	13		7		
37	24	16	1	1	1
	5	4	1	1	1

7 5 1 1 1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	2	2
			1	1	2
			6	3	6
			1	1	1
Total	3		7		
38			1	1	1
			1	1	1
			4	2	2
Total			3		
39	13	9	1	1	2
	12	6	7	3	7
	28	11	2	2	4
	8	4			
Total	4		3		
40	19	12	2	2	4
			2	1	1
			1	1	1
			2	1	2
			4	2	4
Total	1		5		
41	8	6	1	1	1
			6	3	6
			4	2	3
			4	5	8
			1	1	2
Total	1		1	1	1
			3	2	2
Total	1		7		

ARMY-NO. WASHINGTON PROV. NO. GROUND NO. 447

00000-737 15 PGS 42
FORMERLY SPOT-7381

PENETRATIONS OF SHELLS IN PANELS

21 May 53

PENETRATIONS OF SMALL 120mm, OF-471N LOADED TNT
Soviet

XXXXXX Sheet 4 of 11

XXXXXXXX Round 5, 16

IN PANELS WITH RADIAL 301 AS

CAGED THIEF

15

ORDSG-737 19 FEB 46
FORMERLY SPOTZ-F-281

PENETRATION DATA SHEET

TEST NUMBER
FIRING

DATE 21 May 53

PENETRATION OF SHELLS IN PANELS

PRIORITY NUMBER

XEROX COPY Sheet 5 of 11

XEROX COPY Pound No. 16

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADII OF 30° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			1	1	1
			1	1	1
			3	3	2
			1	1	1
Total					10
51			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			2	1	1
			2	2	1
			1	1	1
			2	1	1
			3	1	1
			1	1	1
			2	1	2
			2	1	1
Total					13
52	14	12	3	2	4
			5	2	5
			1	1	1
			2	1	1
			3	1	2
			3	2	2
			2	1	1
			3	3	6
			3	2	1
			3	2	1
			1	1	1
			3	1	2
			1	1	1
			3	1	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
53			2	1	1
			3	2	2
			3	3	3
Total		1			18
			4	2	2
			1	1	1
			1	1	1
			1	1	1
			3	3	6
			1	1	1
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			3	2	2
			1	1	1
Total					13
54	12	5	3	2	2
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			3	2	1
			3	2	2
Total		1			8
			COMPLETED	ALL	

ORDSG-717 18 FEB 48
FORMERLY 87072-F-291

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 21 May 53

FIRING REGIMENT NUMBER

PROJECTILE NUMBER

XXXXXX Sheet 6 of 11

XXXXXX Round No. 16

ROUTE NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	WIDTH	DEPTH
55			3	2	1	Total					3
Total					1	60.3					
56			1	1	1	60.4	5	4	1	1	1
			1	1	1	Total		1			2
Total					2	60.5	27	12	1	1	1
57	7	4	1	1	1	Total		1			1
			3	2	1	60.6	3	2	1	1	1
			4	3	3	Total		1			1
Total	1				3	61.1	20	9			
58.2			4	1	1	Total		1			
Total					1	61.2			1	1	1
58.4			3	2	3	Total					1
Total					1	61.4			3	1	2
58.5	11	6	5	2	2	Total					1
Total	1				1	61.5	3	2	1	1	1
59.1			4	1	1				3	2	6
Total					1				5	3	7
59.3	10	6	2	1	1	Total		1			3
Total	1				1	61.6			5	2	2
60.2	24	17	2	1	1	Total			1	1	1
Total	1				1						2
60.3			2	2	2						
			2	1	1						
			3	2	2						

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

LOT NO.

DATE 21 May 55

FIRING RE. NO. 112

PRIORITY NUMBER

XXXXXX Sheet 8 of 11

XXXXXX Round No. 16

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT
Soviet

IN PANELS WITH RADII OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
5.1			4	2	4
Total					1
9			4	2	3
Total					1
12			4	2	2
Total					1
17			4	2	2
Total					1
22			2	1	1
Total					1
25	12	5	10	2	4
			5	4	3
Total	1				2
26	5	3	5	1	1
Total	1				1
27			1	1	1
Total					1
28			2	1	1
Total					1
29	15	4	1	1	1
	13	9	12	3	4
			5	3	7
			1	1	1
			1	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENTH	WIDTH	DEPTH
29				3	1
Total		2			7
30	14	4	2	1	3
	14	3	5	3	3
37	9				
Total	3				2
31	36	13	3	2	1
	5	3	3	2	2
			8	3	4
			2	2	1
			3	1	1
Total	2				5
32	11	5	1	1	1
Total	1				1
33	5	4	5	1	2
	23	9	4	4	4
	22	11	2	1	1
	8	3	3	1	1
			2	1	1
			3	1	1
Total	4				6
34	21	9	5	3	2
	7	3			
	5	4			
	15	6			
	34	9			
Total	5				1

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

United States

BAT NO. 5
FIRING POSITION NUMBER
PRIORITY NUMBER

DATE 21 May 53

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122MM, OF-47IN LOADED TNT
Soviet

IN PANELS WITH RADIUS OF 60' AND FEET

XXXXXX XXXX Sheet 9 of 11

XXXXXX XXXX Round No. 16

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
35	6	6	1	1	1	40			7	3	4
	5	3	1	1	2				2	1	1
	9	5				Total					2
	38	16				41			2	1	7
	38	8							2	1	1
Total		5			2				1	1	1
									6	3	2
36	21	13	6	3	7				1	1	1
	16	11	2	1	1	Total			2	2	2
	9	6	7	3	7	42	10	10	3	1	1
	11	6	3	2	2				2	2	2
	28	9	2	1	2	Total					6
	4	4				43			1		
Total		6			5				2		
									2	1	1
37	26	12	2	1	1				2	2	2
			4	3	7	Total			1	1	1
			2	2	3	44	6	4	4	1	1
			2	1	1				2	2	1
			1	1	1	Total			3		
Total		1			5	45			4	1	1
									2	1	1
38	14	9	2	1	1				3	1	1
			1	1	1	Total			5		
			2	1	1	46			6	4	2
			1	1	1				2	1	1
Total		1			4						
						Total			1		
39	7	4	3	2	3	47			4	1	1
	7	5	4	3	3				2	1	1
	9	6	2	1	1	Total			3	2	1
			2	2	1	48					
Total		3			4						

CROSS-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NO.

DATE 21 May 58

FIRING RECD. NUMBER

PRIORITY NUMBER

XXXXXX Sheet 10 of 11

XXXXXX Round No. 16

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, OF-471N LOADED TNT

Soviet

IN PANELS WITH RADII OF

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46			3	2	2
			1	1	1
			2	1	1
Total					3
47			1	1	1
			2	1	1
			1	1	1
			3	2	1
			3	1	1
			1	1	1
Total					6
48			2	1	2
			1	1	1
			2	1	1
			1	1	1
			4	2	3
			3	2	1
Total					6
49			5	2	2
			4	3	2
Total					2
50			3	3	1
			3	2	1
			2	1	1
			2	1	1
			1	1	1
Total					5
51	6	6	2	2	1
			3	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	1
			3	1	2
			1	1	1
Total					6
52			3	2	2
			3	2	1
			1	1	1
			1	1	1
			2	1	1
Total					5
53			2	1	1
			3	2	1
			5	2	3
			4	2	1
			4	2	1
			1	1	1
			2	1	1
Total					7
54			3	2	2
			3	1	2
			2	2	1
			3	1	1
			3	1	1
			3	2	4
Total					6
55	11	8	1	1	1
			4	4	2
			3	2	1
			2	1	1

CONFIDENTIAL

ORDN-737 10 FEB 48
FORMERLY WFOUZ-F-301

PENETRATIONS OF SHELLS IN PANELS

LOT NO.

DATE 21 May 53

FIRING RAY NUMBER

PRIORITY NUMBER

XXXXXX Sheet 11 of 11

XXXXXXX Round No. 16

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, CF-471N LOADED TNT
Soviet

IN PANELS WITH RADIUS OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total 55		1			4
56		4	2	2	
		2	1	1	
		3	1	2	
Total					3
58.3		8	5	2	
Total					1
59.1	12	8	1	1	1
		1	1	1	
Total	1				2
59.2		3	1	1	
		3	1	1	
Total					2
60.1		5	5	2	
Total					1
60.2	17	9	3	2	2
	6	5			
Total	13	12			
Total	3				1
60.3		1	1	1	
		2	2	2	
Total					2
61.1	15	10	3	1	1
	6	4	3	2	2
Total	2				2

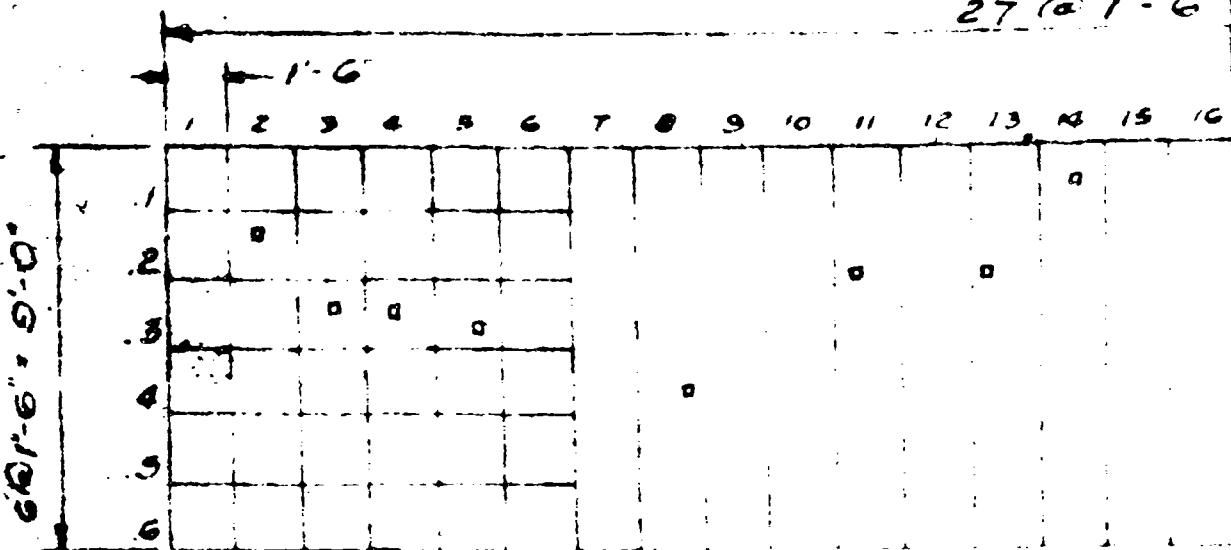
PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.2	10	5	3	2	2
	11	6	3	2	2
		4	2	3	
Total		2			
61.3	7	7	4	2	4
		2	1	1	
Total		1			2
62.1	5	4	2	1	1
	18	18	2	1	1
Total	2				2
62.2			1	1	1
Total					1
62.3			10	3	6
Total					1
63.1	20	16	8	3	7
Total	1				1
63.2	7	6			
	10	6			
	7	3			
Total		3			
63.3	20	18	3	2	3
		2	1	1	
Total		1			2
TOTALS					
60' Radius		55			149

B-11822

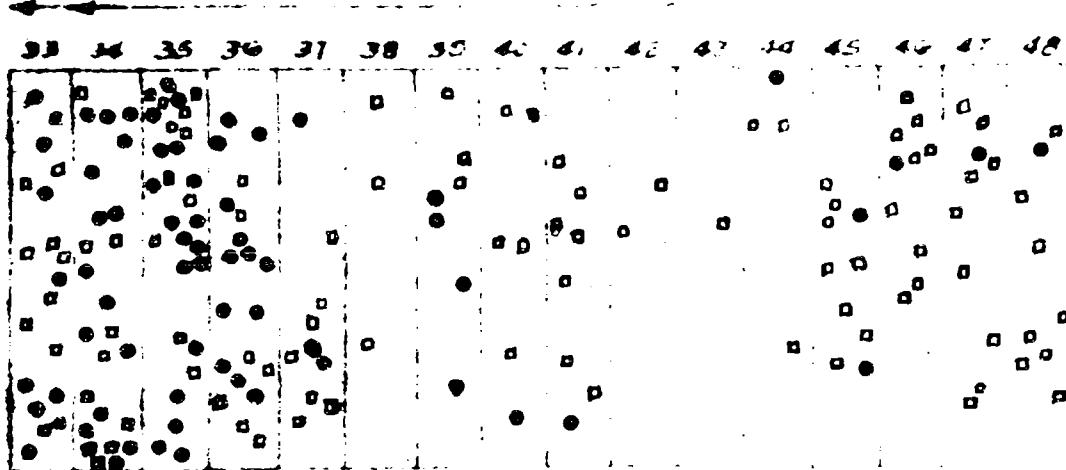
CONFIDENTIAL PANEL

30 FT RADIUS

27 @ 1'-6"



35 @ 1'-6"



1 NO. 3 PINE BOARDS (DRESSED) PL
DATE: 5-21-53, RD. NO. 16. PERFORA
SHELL: 122 MM. SOVIET. PENETRA
SUSPENSION: HORIZONTAL.

CONFIDENTIAL

1

2

PANEL A

RADIUS 180° ARC

27 @ 1'-6"

15"

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

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Figure 1. A schematic diagram of the experimental setup for the measurement of the absorption coefficient.

Figure 1. The effect of the number of clusters on the classification accuracy of the proposed model.

Figure 1. A scatter plot showing the relationship between the number of species per genus and the number of genera per family.

SECRET//~~REF ID: A65714~~

PERFORATIONS. 114. -

PENETRATIONS. 260.-D

SOME COURSES SECT.

SECRET OF FINES

1

NUMBER AND DISTRIBUTION
OF PROPAGANDISTS
IN CHINA

١٢٣٦ - میرزا علی بن احمد بن علی بن احمد

CONFIDENTIAL

180° ARC

15"

1 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

3

A scatter plot showing the relationship between two variables. The x-axis ranges from 52 to 100, and the y-axis ranges from 1 to 100. Data points are plotted as open squares and solid circles.

The data points show a clear positive correlation. There are two distinct clusters of points: one in the lower-left quadrant (x < 60, y < 20) and another in the upper-right quadrant (x > 60, y > 20). The points in the upper-right quadrant are more densely packed than those in the lower-left.

1870 VENICE ITALY

TIONS, 114. -o
TIONS, 260. -o

RANGE CONDITIONS SECTION

SECRET OF MIRRORS

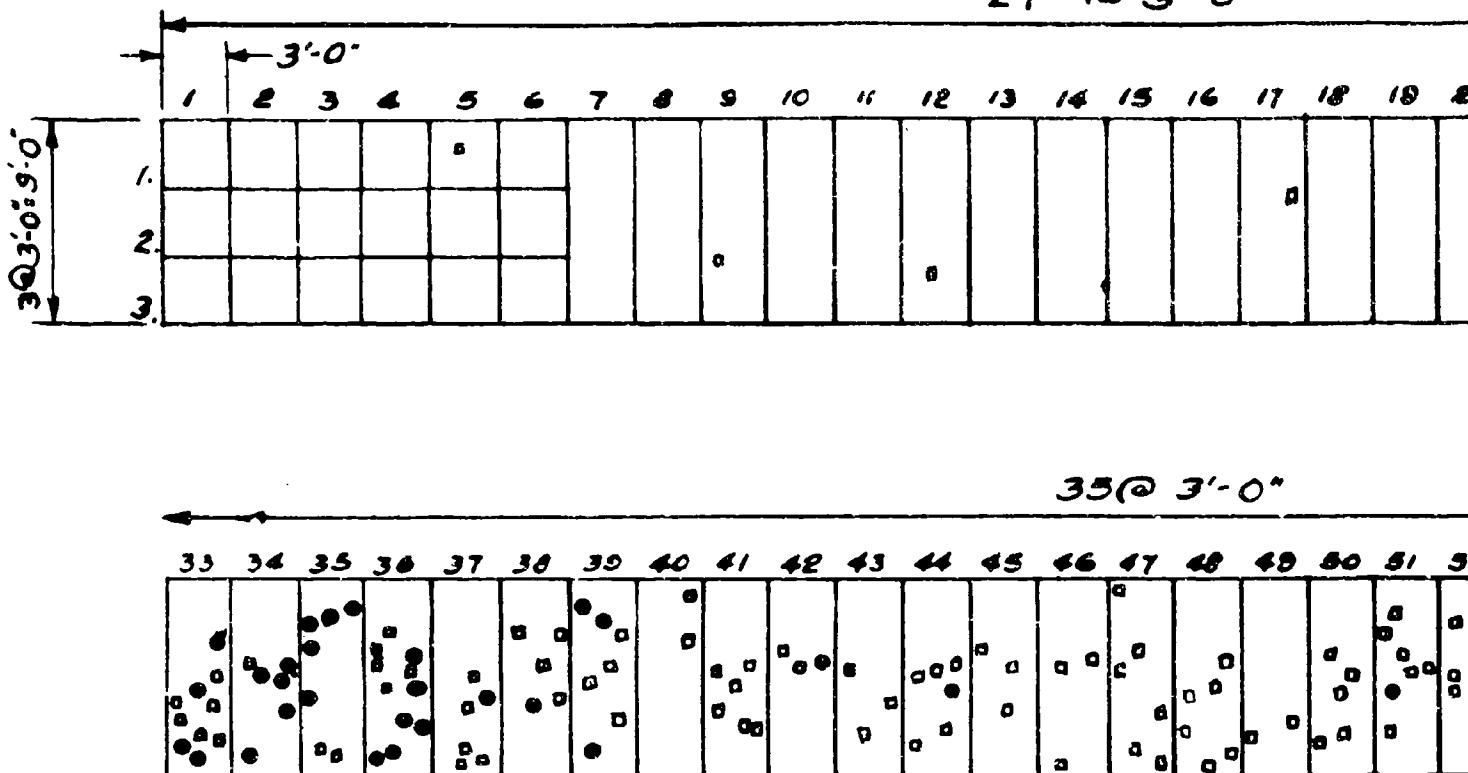
11

NUMBER AND DISTRIBUTION
OF INGANIS
IN U.S.

Received Oct 14 1966 from Mr.
Lester C. T. 1966. 1000.00

B-11822

CONFIDENTIAL *PANEL B*
60 FT. RADIUS 180° AE
ST @ 3'-0"

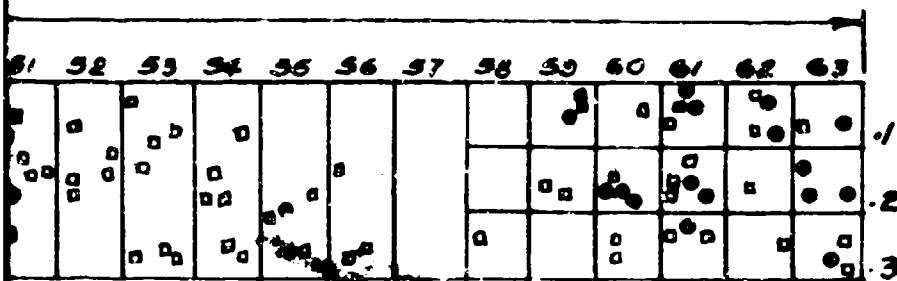
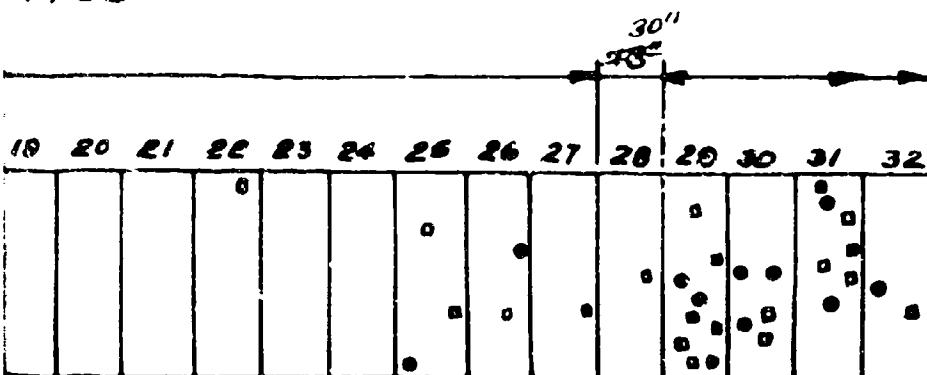


1" NO. 3 PINE BOARDS (PRESSED) PLACED VE
DATE: 5-21-53, RD. NO. 16. PERFORATIONS, 55
SHELL: 122 MM. SOVIET. PENETRATIONS, 14
SUSPENSION: HORIZONTAL.

~~CONFIDENTIAL~~

2

ARC



VERTICALLY.

55. -148. -

RANGE OPERATIONS SECTION

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

60' RADIUS

ABERDEEN PROVING GROUND, MD.
OCT. 27, 1944 APG 11876-14 PR

DEFENSE MATERIAL NO. D-11712
INVENTORY 3.

ROUND NO. 32

12 June 1952

SHELL, PG, 200mm, Soviet
IOT-3M, C-452A, Ammonium Nitrate 90% - TNT 10%

SHELL MARKINGS

NUMBER

515
4-45
122

REVERSE

(none)

END

Machined length

Shell has one split rotating band.

Weight of shell w/o propellant = 46.00 lbs.
As Fired = 106.00 lbs.

Distance from shell to the center of the 2,000 lb. burled flange target = 20.00 ft.

Shell location during test shown in Aerial Photograph No. A-70127.

Test area drawn and given target number & weight and velocity information to the
Aerial Photograph No. A-70127.

DEFENSE MATERIAL NO. D-11712
INVENTORY 3.

[REDACTED]

FRAGMENT VELOCITY DATA

CONFIDENTIAL
THIS INFORMATION IS UNCLASSIFIED

Test of Shell, H.E., 122MM, Soviet AT/90 Side Velocity Box Data

Proof Director Mr. O. L. Rogers Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	95		17	N.R.		33	N.R.	
2	26		18	N.R.		34	N.R.	
3	N.R.		19	N.R.		35	2	
4	N.R.		20	1		36	26	
5	N.R.		21	8		37	21	
6	264		22	144		38	N.R.	
7	21		23	N.R.		39	N.R.	
8	13		24	12	2043	40	20	
9	2		25	25	2157	41	10	
10	9		26	74		42	62	
11	113(3)		27	1		43	N.R.	
12	N.R.		28	N.R.		44	4	
13	3		29	7		45	3	
14	176	2252	30	61		46	15	
15	11		31	N.R.		47	59	
16	21(2)		32	12		48	73	

Average velocity 23.22 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.4 % for the highest velocity and \pm 3.1 % for the lowest velocity.

Sheet 1 of 5

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, H.E. 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. L. Rogers

Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
7			65	15		81	8	
113			66	N.R.		82	69	2368
115			67	15		83	79	
3			68	213(2)		84	273	
N.R.			69	N.R.		85	10	2157
N.R.			70	9	2368	86	305	2231
3			71	N.R.		87	21	2231
N.R.			72	N.R.		88	N.R.	
2			73	N.R.		89	N.R.	
61			74	21		90	7	
N.R.			75	26		91	3	
71	2397		76	N.R.		92	64	
4			77	N.R.		93	51	
128			78	N.R.		94	5(2)	2043
113	2311		79	N.R.		95	10	2027
53			80	3		96	2	

Average velocity 2392 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.4 % for the highest velocity and \pm 3.2 % for the lowest velocity.

Sheet 2 of 5

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, H.E. 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. L. Rogers

Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	5		113	34		129	4	
98	2	2182	114	39		130	25	
99	4	2368	115	N.R.		131	N.R.	
100	9		116	9		132	N.R.	
101	12(3)		117	39		133	12	
102	N.R.	2311.	118	N.R.		134	34	2489
103	N.R.		119	96		135	N.R.	
104	16	2157	120	37		136	16	
105	N.R.	2427	121	5		137	N.R.	
106	N.R.		122	N.R.		138	N.R.	
107	4		123	N.R.		139	N.R.	
108	106	2.27	124	1		140	82	2555
109	15	2182	125	3	2489	141	N.R.	
110	25		126	N.R.		142	80(2)	2555
111	7	2555	127	N.R.		143	N.R.	2521
112	18		128	N.R.		144	N.R.	

Average velocity 23.3 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.4 % for the highest velocity and \pm 3.1 % for the lowest velocity.

Sheet 3 of 5

CONFIDENTIAL

FRAGMENT VELOCITY DATA

CONFIDENTIAL

Test of Shell, H.E. 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. L. Rogers

Date Fired 12 June 1952

Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	38	2458	161	N.R.		177	155	2427
146	7	2555	162	46		178	N.R.	2427
147	N.R.	2489	163	21		179	46	
148	26		164	10		180	04	
149	61	2555	165	3		181	2	2521
150	N.R.		166	6(2)		182	79(2)	2555
151	N.R.		167	11		183	47	2588
152	64		168	N.R.		184	N.R.	2427
153	16		169	30		185	N.R.	
154	N.R.		170	N.R.		186	1	
155	2	2311	171	N.R.		187	39	2521
156	N.R.		172	N.R.		188	N.R.	
157	12	2427	173	13		189	N.R.	
158	N.R.		174	8	2489	190	N.R.	
159	N.R.		175	3(2)		191	19	
160	N.R.		176	7	2458	192	35	

Average velocity 2393 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.4 % for the highest velocity and \pm 3.1 % for the lowest velocity.

Sheet 4 of 5

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, H.E., 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. L. RogersDate Fired 12 June 1952Distance from detonation point to target 22' 7" feet. Round No. 11

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
193	N.R.		209	N.R.				
194	N.R.		210	N.R.				
195	N.R.		211	N.R.				
196	9		212	N.R.				
197	15		213	9	2507			
198	N.R.		214	258	2539			
199	N.R.		215	1				
200	30		216	34				
201	3		217	N.R.	2658			
202	5		218	6	2572			
203	N.R.		219	8				
204	N.R.		220	2				
205	11	2230	221	N.R.				
206	N.R.		222	1				
207	15	2507	223	7				
208	N.R.		224	6				

Average velocity 223 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.4 % for the highest velocity and \pm 2.1 % for the lowest velocity.Sheet 5 of 5

PENETRATION SHELLS IN PANELS					LIT. NUM.	DATE 12 June 52
					FIRING ROLL NUMBER	
					PRIORITY NUMBER	
PENETRATIONS OF SHELL 122-mm, O-462A LOADED AT/90 SOVIET					XATVXXXXX	Sheet 1 of 37
IN PANELS WITH SIGHT OF 30° AND FEET					XATVXXXXX	Round No. 11
PANEL NUMBERS	PERFORATIONS	PENETRATIONS			PANEL NUMBERS	PERFORATIONS
	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH
2.5		1	1			1
Total			1			
3.3		2	1	1		
Total			1			2
5.1		2	1	1		
Total			1			
8		1	1	1		
Total			1			
9		1	1	1		
	2	2	2			
	1	1	1			
	2	1	2			
	1	1	1			
Total			5			
11		1	1	1		
	2	1	1			
	1	1	1			
	1	1	1			
Total			4			
12		2	2	2		
	2	2	3			
	2	2	1			
Total			3			
13	4	2	2	6		
Total	1			1		
14		2	2	2		

CONFIDENTIAL

ORD-80-387 10 FEB 48
FORMERLY SPOTZ-P 291

PENETRATION OF SHELLS IN PANELS

107 NOV 48

FIRING NUMBER

PRIORITY NUMBER

DATE 12 JUNO 52

PENETRATIONS OF SHELL 122mm, O-462A LOADS AT/90

Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

XXXXXX Sheet 2 of 37

XXXXXX Round No. 11

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	6
			1	1	1
Total	1			6	
24	3	3	1	1	2
			2	1	2
			1	1	1
			3	2	7
			3	3	6
Total	1			5	
25	4	2	3	3	4
	4	3	2	1	4
	6	3	2	1	4
	3	2	1	1	4
	4	3	2	2	10
	4	4	1	1	1
	5	3	1	1	3
			1	1	3
			3	2	3
			3	2	4
			2	2	4
			1	1	2
			1	1	2
			2	1	1
			3	3	3
			2	1	5
Total	7			16	
26	5	3	2	2	4
	3	2	3	2	9
	2	1	1	1	2
	5	2	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	4	3	3	2	8
	3	3	2	2	3
	5	2	2	1	2
	5	4	1	1	3
	1	1	2		
	2	1	2		
	1	1	1		
	1	1	2		
	2	2	6		
	2	2	4		
	2	1	6		
	1	1	1		
	1	1	1		
Total	8			17	
27	5	4	2	2	4
	4	3	1	1	1
	4	3	1	1	2
	5	5	1	1	2
	6	3	1	1	1
	4	3	1	1	1
	13	5	1	1	3
	3	3	3	3	6
	19	5	1	1	1
	3	2	3	3	6
	4	5	1	1	2
	4	3	2	1	1
			2	2	5
			1	1	3
			1	1	2
			1	1	2
			2	2	6
			3	2	2
			3	2	5

CONFIDENTIAL

ORDBG-737 10 FEB 48
FORMERLY EPTZ-F-291

PENETRATIONS OF SHELLS IN PANELS

LOT NO. 1
FIRING ROLL NUMBER

DATE 12 Juno 52

PENETRATIONS OF SHELL 122mm, O-4621 LOADED AT/90

Soviet
IN PANELS WITH HEIGHT OF 30' AND FEETPRIORITY NUMBER
XXXXXX Sheet 3 of 37

XXXXXX Round No. 11

HOLE NUMBER

PANEL NUMBERS	PERFORATIONS			PANEL NUMBERS	PERFORATIONS		
	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH
	1	1	1		5	3	2
	1	1	1		6	3	2
	2	2	6		30	5	3
	2	2	3		3	2	1
Total	12		23		3	3	2
					8	5	1
23	7	4	3	2	3	2	9
	3	2	2	1	2	1	1
	11	7	3	1	7	4	3
	7	3	2	2	3	2	2
	9	4	3	3	1	1	1
	6	4	1	1	2	1	3
	6	4	1	1	1	1	3
	7	5	3	2	2	2	10
	7	4	1	1	1	1	2
	3	2	2	2	1	1	5
	6	4	3	2	1	1	2
				2	2	2	8
				1	1	1	1
				1	1	1	1
				1	1	1	1
Total	11		21		15		25
29	4	3	3	2	6	3	2
	7	4	1	1	4	1	1
	4	3	1	1	5	3	2
	6	3	1	1	14	4	2
	5	3	2	1	10	9	1
				1	1	1	1
Total	11		21		13	7	2
					9	5	1
					12	4	2
					11	4	2
					6	2	1
					4	3	1
					5	4	3
						2	6

CONFIDENTIAL

ARMY OR ABERDEEN PROVING GROUND NO. 445

ORDBQ-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

B 11 82-6

DATE 12 June 48

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT /90

Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

SET NUMBER

STYLING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 4 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
3	2	2	2	2	3		5	4	2	1	3
10	9	1	1	1	1		8	4	1	1	1
4	3	3	2	2	7				2	2	3
10	3	1	1	1	2				1	1	2
9	4	3	3	3	2				1	1	1
4	3	1	2	1					2	1	3
8	8	3	2	2	6				2	2	7
7	4	1	1	1					2	2	4
		3	2	8					3	1	2
		1	1	1					2	2	6
		2	1	2					1	1	1
		1	1	1					2	1	2
		4	3	7					1	1	1
		1	1	1					2	2	9
		1	1	1					3	1	2
		3	2	5					2	1	1
		2	1	3					2	2	4
		2	1*	2					4	2	4
		2	2	1					1	1	1
		1	1	3					3	3	5
		1	1	2					2	1	4
		2	1	8					Total	11	30
		2	1	2							
Total		20		35					32	6	1
									5	3	1
31	4	3	3	2	1				13	6	2
	4	3	2	2	2				5	4	2
	3	2	2	1	2				8	8	4
*	11	4	1	1	1				3	2	1
	3	2	3	2	8				7	5	3
	6	3	1	1	2				5	3	1
	5	5	2	2	5				3	2	2
	7	5	3	2	8				11	5	1
	4	3	1	1	1				4	2	1

GROSS-237 19 FEB 48
FORMERLY SPOTZ F-281

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122MM, O-462A LOADED AT/90

IN PANELS WITH RADS 30° AND FEET

Soviet

XXXXXX Sheet 5 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
cont 32			3	2	4				3	2	3
			3	2	3				2	1	1
			4	2	7				2	1	6
			2	1	3				1	1	1
			1	1	1				1	1	1
			1	1	2				2	1	3
			3	1	8				2	1	2
			3	2	4				2	1	2
			1	1	2				3	2	10
			1	1	1				4	2	5
			1	1	1				3	3	9
Total	11				22				2	1	3
									2	1	1
33	11	5	2	1	1				3	2	3
	11	6	1	1	1				3	2	4
	5	4	2	1	3				3	1	1
	5	2	2	1	2				4	2	1
	23	8	2	1	1				Total	18	38
	3	2	2	1	1						
	6	4	4	2	5				34	4	2
	4	4	2	1	1					10	8
	17	6	3	2	3					9	5
	6	2	2	1	2					5	2
	4	2	2	2	3					10	5
	16	8	2	1	2					4	2
	4	3	1	1	1					11	5
	6	2	1	1	1					9	7
	10	5	3	2	7					4	4
	5	5	5	2	3					14	7
	7	3	1	1	2					5	3
	5	2	3	2	4					6	5
			3	1	3					10	6
			1	1	1					14	6
			1	1	1					5	3

ORDBG-737 18 FEB 48

FORMERLY BROTE-P-181

PENETRATION OF SHELLS IN PANELS

DATE 12 June 52

PENETRATIONS ON SHELL 122mm, 0-462A LOADED AT/90

Soviet
IN PANELS WITH RADIUS OF 30' AND FEET

PILOT NUMBER

TRAIL NUMBER

PRIORITY NUMBER

XXXXXXX Sheet 6 of 37

XXXXXXX Round No. 11

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 34	8	3	2	2	8				2	1	1
	4	4	3	2	6				1	1	1
	8	5	1	1	1				2	1	1
	13	5	2	1	1				1	1	1
	5	3	3	2	2	Total	35				53
	12	8	3	3	3	35	10	9	1	1	1
	11	11	2	2	3		8	3	1	1	1
	7	3	3	2	6		20	8	2	1	6
	5	5	4	3	6		5	3	1	1	1
	11	6	3	2	3		14	8	1	1	1
	8	3	2	1	2		12	5	1	1	2
	12	6	5	4	5		7	4	2	1	1
	3	2	1	1	1		22	7	3	2	4
	8	5	3	2	1		10	4	2	2	2
	24	6	1	1	2		13	7	2	2	1
	8	4	3	1	5		12	11	1	1	1
	12	5	3	2	6		9	6	1	1	1
	32	8	1	1	2		15	7	1	1	1
	9	3	1	1	2		9	3	1	1	4
	7	3	2	1	1		4	3	1	1	1
			1	1	3		6	3	2	1	1
			2	1	2		15	6	2	1	2
			3	3	4		16	?	1	1	1
			1	1	1		5	3	1	1	1
			3	2	4		24	10	2	1	1
			1	1	3		4	3	1	1	2
			2	1	5		14	12	6	4	7
			4	2	4		3	2	3	2	2
			1	1	1		9	6	6	4	10
			3	2	3		3	2	1	1	2
			1	1	1		13	8	2	1	2
			3	2	3		15	4	2	1	1
			1	1	1		12	6	3	2	1
			3	2	1						

ORUQG-137 16 FEB 48
FORMERLY SPOTZ-F-201

PENETRATION

SMELLS IN PANELS

PENETRATION

FIRING RECD. NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 322mm. O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30°

AND FEET

XXXXXX XXXX Sheet 7 of 37

XXXXXX XXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS			PENETRATIONS	
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
35 cont	7	3	3	2	7
	8	4	1	1	1
	7	5	1	1	1
	10	5	1	1	1
	11	5	1	1	2
	15	9	4	2	3
	4	2	5	2	2
	4	4	1	1	1
	10	6	3	2	1
	9	8	2	1	1
31	11	1	1	1	
		4	3	3	
		7	3	5	
		3	2	4	
		4	3	3	
		2	1	2	
		2	1	2	
		1	1	1	
		3	2	4	
		5	3	8	
		2	1	2	
		2	1	3	
		2	1	1	
		1	1	2	
		1	1	1	
		3	2	3	
		1	1	1	
		1	1	1	
		3	3	7	
		3	2	4	
		1	1	1	
		2	1	3	
		1	1	1	
		4	3	5	

PANEL NUMBERS	PERFORATIONS			PENETRATIONS	
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
				2	1
				3	2
				12	6
				1	1
				4	3
				3	2
				1	1
				3	2
				1	1
				1	1
				2	1
				6	4
				3	2
				2	1
				2	1
				4	1
				1	1
Total		39			79
	33	6	2	3	3
		7	4	1	1
		6	4	4	2
		6	4	3	2
		14	6	5	3
		10	4	3	2
		10	6	1	1
		5	3	2	1
		16	6	1	1
		8	5	3	2
		7	4	3	2
		5	4	1	1
		5	3	3	2
		13	6	2	1
		8	5	2	2

ORDNAC-737 10 FEB 48
FORMERLY SPOTZ-F-261

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

IN PANELS WITH RADIUS OF

Soviet

30°

AND

FEET

LOT NO.

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 8 of 37

XXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS			PENETRATIONS			PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
11	5	3	7					2	2	2			
5	5	3	4					3	3	5			
10	9	4	8					2	1	1			
20	6	1	1					2	1	1			
15	9	1	1					3	2	6			
10	4	1	2					3	2	1			
8	4	3	8					1	1	3			
7	6	2	1					1	1	1			
4	3	1	1					3	2	3			
9	5	1	1					3	3	7			
5	3	3	5					2	1	1			
19	10	2	2					1	1	1			
4	3	1	1					2	2	2			
21	10	1	1					1	1	1			
9	8	3	3					3	2	4			
5	3	3	8					1	1	1			
4	3	6	5					1	1	1			
7	3	3	2					1	1	1			
7	4	1	1					1	1	1			
6	3	3	2					3	3	7			
6	3	2	1					2	1	8			
6	3	1	1				Total	38		70			
10	4	1	1										
	2	1	2				37	7	3	2	1	1	
	1	1	1					5	5	2	2	4	
	2	1	1					9	5	4	2	3	
	2	1	1					7	6	2	2	2	
	2	1	1					8	5	3	3	3	
	3	2	1					4	3	4	2	2	
	4	3	3					5	4	2	1	2	
	2	2	3					4	3	4	3	2	
	2	2	3					8	6	2	2	2	
	1	1	1					11	4	2	2	2	
	2	1	1					17	5	1	1	1	

ORDS-737 10 FEB 48
FORMERLY SPOTZ-P-281

PENETRATION OF SHELLS IN PANELS

TEST NUMBER
FIRING NUMBER
PRIORITY NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30° AND

FEET

XXXXXX Sheet 9 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
10	5	1	1	1	1				2	1	1
9	4	1	1	1	1				2	1	1
	1	1	1	1	1				2	2	2
	4	3	5			Total	13				48
	2	2	2								
	1	1	1								
	3	2	3								
	1	1	1								
	3	2	2								
	4	3	1								
	5	3	6								
	4	3	4								
	1	1	1								
	3	3	2								
	4	2	3								
	4	1	1								
	4	2	2								
	2	1	1								
	1	1	1								
	3	3	4								
	4	3	4								
	3	2	1								
	2	1	1								
	2	1	2								
	1	1	1								
	1	1	1								
	2	1	2								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								
	1	1	1								
	2	1	1								
	2	1	1								
	4	3	6								
	5	2	3								
	2	1	1								
	1	1	1								

ORDERS-737 19 FEB 48

FORMERLY SPOTZ-P-201

SOVIET PENETRATIONS

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

301

AND

FEET

DATE 12 June 52

PIST NUMBER

FIRING NUMBER

PRIORITY NUMBER

PENETRATION NUMBER

XXXXXX Sheet 11 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	3
			1	1	1
			1	1	1
			1	1	1
			3	3	2
			1	1	1
			3	2	4
			1	1	1
			1	1	1
			3	3	4
			1	1	1
			3	2	2
			2	2	2
			1	1	1
			1	1	1
			4	3	4
			1	1	1
			1	1	1
			1	1	1
Total	6		28		
42	15	8	5	3	3
	7	3	4	2	2
	15	8	1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			2	2	1
			9	4	6
			2	2	1
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	2	2
			1	1	1
			2	1	1
			3	3	2
			1	1	1
			3	3	3
			3	2	3
			2	2	1
			2	1	1
			3	2	4
			1	1	1
			3	2	4
			1	1	1
			3	3	1
			3	2	1
			2	1	1
			4	3	5
			2	1	1
Total	3		31		
43	11	8	4	3	4
			1	1	1
			6	4	8
			1	1	1
			2	2	1
			2	1	1
			1	1	1
			1	1	1
			3	2	1
			4	3	2
			1	1	1
			1	1	1
			1	1	1
			1	1	1

CONFIDENTIAL

ORDN-737 10 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

DET. NUMBER

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

FIRING POSITION NUMBER

PRIORITY NUMBER

XXXXXX Sheet 12 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1				2	1	1
			3	2	3				3	3	2
			2	1	1				1	1	1
			3	2	2				2	1	1
			3	2	2				4	3	5
			1	1	1				3	2	2
			1	1	1				5	3	3
			1	1	1				1	1	1
			1	1	1				1	1	1
Total	1				23	Total	1				19
44	5	5	5	2	5	46			2	1	1
	6	3	4	3	3				4	2	2
			2	2	2				1	1	1
			3	2	2				2	2	1
			1	1	1				2	1	1
			1	1	1				2	1	1
			3	1	1				2	1	1
			1	1	1				2	1	1
			2	2	2				1	1	1
			3	3	2				2	1	1
			5	4	2				1	1	1
			2	2	2				2	2	1
Total	2				12				6	3	3
45	6	5	3	2	2				1	1	1
			4	3	3				3	1	1
			1	1	1				2	2	1
			1	1	1				1	1	1
			4	2	1				3	2	2
			1	1	1				1	1	1
			12	6	4						18
			2	1	1				47	3	2
			5	2	1					2	1

OROBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

13-11-82-2

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
IN PANELS WITH RADIUS 30' AND FEET

LOT NUMBER

FIRING RECD. NUMBER

PRIORITY NUMBER

XXXXXX Sheet 13 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			1	1	1
			3	3	2
			2	1	2
			4	3	6
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			5	3	4
			3	2	2
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			5	3	3
			1	1	1
			3	2	2
			1	1	1
			2	2	1
			1	1	1
			2	2	2
			2	1	1
			3	1	1
			1	1	1
Total					21
48			3	2	1
			1	1	1
			3	3	3

CONFIDENTIAL

[REDACTED]

ORDNO-737 19 FEB 46
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADS AT/90

Soviet 301

IN PANELS WITH RADIUS OF 30° AND

PERFECT LOSS **PENETRATION**

卷之三

FIRING RECORD NUMBER

PRIORITY NUMBER

DATE 12 June 58

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XXXXXX Sheet 14 of 37

~~EXCERPT~~ Round No. 11

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	1
			1	1	1
Total					17
50			5	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			1	1	1
			1	1	1
			2	2	1
			4	1	2
			2	1	1
			2	1	1
			3	2	2
			1	1	1
			4	4	3
			2	1	1
			4	3	6
			1	1	1
			4	5	5
			2	2	2
			4	3	7
			1	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			4	1	2
Total					28

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
51			1	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			4	3	4
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			2	1	1
			1	1	1
			4	3	2
			1	1	1
			1	1	1
			5	3	4
			2	2	1
			3	2	3
			1	1	1
			2	2	2
			1	1	1
			2	2	1
			3	1	1
			2	1	1
			1	1	1
			3	2	2
			2	1	1
			3	2	5
			2	1	2
			3	2	7

CORNER BENTHALL

ORDBQ-737 18 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

LOT NUMBER

DATE 12 June 52

FIRING POSITION NUMBER

PRIORITY NUMBER

X X X X X X X Sheet 15 of 37

X X X X X X X Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
Total					35
52			4	4	10
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			5	4	9
			1	1	1
			1	1	1
			1	1	1
			3	2	2
			5	4	8
			3	3	3
			1	1	1
			1	1	1
			2	2	1
			1	1	1
			3	1	1
			1	1	1
Total					20
53			4	3	2
			3	2	2
			2	1	1
			1	1	1
			2	2	2
			3	3	3
			1	1	1
			4	3	8
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	2
			1	1	1
			1	1	1
			3	2	1
			2	1	1
			4	2	3
			2	1	1
			2	1	1
			3	2	1
			3	1	1
			4	2	3
			4	2	7
			3	2	3
			4	3	4
			2	1	1
			2	1	1
			3	1	1
			3	2	2
Total					27
54			3	3	5
			2	1	1
			1	1	1
			2	2	1
			2	1	1
			2	2	2
			2	2	1
			3	2	1
			3	1	1
			5	5	3
			2	1	1
			4	3	4
			2	2	2
			1	1	1

CONFIDENTIAL

PENETRATIONS					PENETRATIONS				
PENETRATIONS OF SHELLS IN PANELS					PENETRATIONS OF SHELLS IN PANELS				
PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90 IN PANELS WITH RADIUS OF 30° AND FEET					PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90 IN PANELS WITH RADIUS OF 30° AND FEET				
SOVIET	30°	AND	FEET		SOVIET	30°	AND	FEET	
PANEL NUMBERS	PERFORATIONS				PANEL NUMBERS	PERFORATIONS			
LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		2	1	1			3	3	3
		2	1	2			3	1	1
		2	2	4			1	1	1
		2	1	1			1	1	1
		1	1	1			4	3	4
		2	1	1			2	1	1
		2	1	1			3	1	1
		3	2	5			2	2	1
		4	3	5			3	1	1
		1	1	1			2	2	1
		1	1	1			3	2	4
		3	3	4			1	1	1
		2	1	1			2	2	2
		1	1	1			2	1	1
Total				28			2	2	2
							1	1	1
55	6	4	4	5			2	2	1
		2	2	1			1	1	1
		3	1	1			3	2	2
		1	1	1			3	3	2
		1	1	1			Total	1	38
		3	2	1			56	4	1
		2	1	1				1	1
		2	1	1				1	1
		5	2	4				2	1
		1	1	1				2	1
		1	1	1				5	2
		1	1	1				4	3
		1	1	1				3	2
		3	1	2				4	3
		1	1	1				1	1
		1	1	1				1	1
		1	1	1				1	1
		1	1	1				1	1

ORDBG-737 18 FEB 48
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

DATA NUMBER

DATE 12 June 5

PENETRATIONS OF SHELL 122-mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

EXCELSIOR Sheet 17 of 37

EXCELSIOR Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	1	1	1	1	1
	3	2	6		
	1	1	1		
	1	1	1		
	1	1	1		
	1	1	1		
	4	3	2		
	1	1	1		
	4	3	3		
Total	1		22		
57	5	4	1	1	1
	3	2	2		
	2	2	2		
	4	2	1		
	1	1	1		
	1	1	1		
	2	1	1		
	2	2	2		
	2	1	1		
	2	1	1		
	2	1	1		
	1	1	1		
	1	1	1		
	2	1	2		
	1	1	1		
	2	2	1		
	3	2	2		
	2	2	2		
	3	2	1		
	1	1	1		
	1	1	1		
Total	1		1		

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	3	3	6		
	4	2	4		
	2	2	2		
	2	1	1		
	1	1	1		
	1	1	1		
	2	1	1		
Total	1		29		
58.1	8	3	2	2	1
	2	1	1		
	1	1	1		
	4	3	2		
	1	1	1		
	4	3	4		
	1	1	1		
	2	1	1		
	3	2	4		
	1	1	1		
	2	2	2		
Total	1		12		
58.2			4	3	2
	2	1	1		
	2	2	2		
	2	1	1		
	1	1	1		
	3	2	3		
	3	1	2		
	3	2	2		
	2	2	2		
Total			10		

CONFIDENTIAL

OROBG-737 10 FEB 48
FORMERLY SPOTZ-F-201

PENETRATION

WORLD WAR II
SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING RING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 18 of 37

Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
58.3				2	1	1
				3	3	1
				2	1	1
				4	4	2
				5	4	3
				2	1	1
				2	1	1
				3	2	2
				5	3	6
				4	3	3
				4	3	3
				5	4	5
				1	1	1
				3	2	2
Total						14
58.4	7	3		2	2	2
				1	1	1
				3	1	1
				4	4	4
				4	4	5
				3	3	3
				5	3	6
Total		1				7
58.5	9	6		4	3	4
				3	2	3
				4	2	2
				2	1	1
				6	2	5
				4	3	4
				2	1	1
				4	3	2
				1	1	1

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
				2	1	2
				1	1	1
				1	1	1
				3	3	4
Total		1				13
58.6						1
Total						1
59.1	4	3		1	1	1
				1	1	1
				2	1	1
				1	1	1
				2	1	5
				2	1	1
				4	2	1
				3	3	1
				4	2	2
				4	3	4
				2	1	1
				2	2	1
				2	1	1
				8	4	9
				7	3	3
				1	1	1
Total		1				17
59.2						1
						1
						4
						3
						4
COPYRIGHT MATERIAL				1	1	1
CONFIDENTIAL				4	3	1
				1	1	1
				3	3	5

PENETRATIONS OF SHELLS IN PANELS						LOT NUMBER	DATE
						FIRING READING NUMBER	12 June 52
						PRIORITY NUMBER	
PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/90						XXXXXX	Sheet 19 of 37
Soviet						XXXXXX	Round No. 11
IN PANELS WITH PASH OF 30° AND FEET						ROCKET NUMBER	
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH
			2	1	1		3
Total					7		2
							5
59.3	14	10	3	3	3		3
			3	2	3		3
			4	2	3		2
			4	2	2		2
			3	1	1		1
			6	5	7		1
			3	2	2		1
			3	2	2		1
			3	3	2		2
Total	1				9	Total	1
							13
59.4	3	2	4	1	1	59.6	2
	4	4	3	3	4		2
			2	1	1		3
			2	2	2		3
							2
							2
							5
							3
							1
							1
							1
							1
							1
Total	2				16	Total	10
59.5	9	3	1	1	1	60.7	6
			1	1	1		3
							4
							2
							5
							2
							6
							3
							3
							1
							1
Total	2				1		1
							1
							1
							3
							1

CONFIDENTIAL
DO NOT DISTRIBUTE

ORDNO-735 12 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING READING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90
Soviet

XXXXXX Sheet 20 of 37

XXXXXX Round No. 11

ROCKET NUMBER

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
			5	3	2				2	1	3
			1	1	1				2	1	1
Total	1				11				2	1	1
									2	2	1
60.2			1	1	1				3	2	1
			1	1	1				4	3	4
			3	2	6				3	3	4
			1	1	1				2	1	3
			1	1	1				1	1	1
			5	3	2						
			1	1	1						
			8	3	4						
Total					8	Total	2				16
60.3	6	3	3	1	1	60.5	5	4	4	2	1
			4	3	2		8	6	4	3	2
			4	3	4		7	3	5	3	3
			1	1	1		5	4	4	4	9
			1	1	1				2	2	2
			3	2	1				2	1	1
			5	4	2				1	1	1
			4	2	1				1	1	1
			8	3	6						
			2	2	2						
			6	4	3						
			1	1	1						
			2	2	3						
Total	1				13	Total	4				8
60.4	10	4	2	2	1						
	8	4	2	1	1						
			1	1	1						
			4	4	7						
			3	2	2						
						61.1	12	8	2	1	1

CONFIDENTIAL

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm. O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30° AND

R-11272-2

LOT NUMBER	DATE 12 June 50
FIRING RECORD NUMBER	
PRIORITY NUMBER	
XXXXXXXXXX	Sheet 21 of 37
XXXXXXXXXXXX	Round No. 11
ROCKET NUMBER	

PANEL NUMBER	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	2
			2	1	3
			4	2	3
			2	1	1
			3	2	4
			4	1	2
			2	1	1
			5	2	2
			5	3	3
			3	2	8
			3	2	3
			2	1	1
			2	1	1
			1	1	1
			1	1	1
Total					16
61.2			3	3	7
			6	5	5
			4	3	4
			1	1	1
			2	2	4
			3	2	6
			2	1	1
			3	3	4
			8	3	7
			2	2	2
			2	1	1
			7	3	5
			2	2	2
			1	1	1
Total					21
61.4			13	7	1
					1
					1
					2
					1
					2
					2
					4
					3
					4
Total					15

@ DRAFTED BY SPOTZ
RECORDED BY SPOTZ

ORCUG-737 18 FEB 48
FORMERLY SPOTL-7-201

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

SOVIET

IN PANELS WITH RADIUS OF 30° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		2	2	2	
		1	1	1	
		5	4	5	
		2	1	1	
		3	1	2	
		2	2	3	
		4	3	9	
		1	1	1	
		1	1	1	
Total	1			20	
Sl. 5	5	4	2	1	1
		6	3	2	
		3	2	1	
		1	1	1	
		3	1	1	
		2	1	1	
		1	1	1	
		1	1	1	
		6	3	7	
		3	2	1	
		1	1	1	
		2	1	1	
		1	1	1	
Total	1			13	
Sl. 5	10	4	2	2	2
		4	3	1	
		3	3	3	
		5	4	4	
		4	3	3	
		4	2	4	
		1	1	1	
		1	1	1	

LOT NUMBER *R-11121*
FIRING READING NUMBER
PRIORITY NUMBER
XXXXXX Sheet 22 of 37
XXXXXX Round No. 11
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		8	4	6	
		1	1	1	
		1	1	1	
		2	1	1	
		2	2	2	
		3	1	1	
		1	1	1	
Total	1				15
	62.1	12	5	1	1
		6	4	3	7
		7	2	9	
		1	1	1	
		1	1	1	
		1	1	1	
		2	1	1	
		3	2	5	
		3	3	6	
		5	3	5	
Total	2				11
	62.2	7	3	2	2
		4	3	5	4
		9	3	1	1
		2	2	3	
		3	3	3	
		2	1	2	
		7	3	5	
		2	2	5	
		5	2	3	
		3	3	8	
		4	2	4	
		1	1	1	

CONFIDENTIAL

DA DRG-747 IN PPN 48
FORMERLY SPOTZ-F-381

PENETRATION OF SHELLS IN PANELS

1ST NUMBER

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122 mm, O-462A LOADED AT/90

X0XXXXXX Sheet 23 of 37

X0XXXXXX Round No. 11

Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

SOCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	2	1	1	1	
	1	1	1	1	
	3	2	2	2	
	4	3	3	3	
	2	2	1	1	
	2	1	1	1	
	3	1	4		
Total	3		19		
62.3	7	3	1	1	1
	4	4	2	2	2
		3	2	2	
		3	3	3	
		3	2	1	
		4	2	4	
		1	1	1	
		4	3	6	
		3	3	3	
		1	1	2	
		2	2	1	
		2	2	4	
		3	3	6	
		8	2	6	
		2	2	2	
		3	2	2	
		3	2	3	
		5	2	4	
		4	2	2	
		2	1	1	
		1	1	1	
		2	1	1	
		1	1	1	
		4	3	5	
		2	1	1	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total	2		1	1	1
62.4	6	5	2	2	1
		2	1	1	
		2	1	2	
		2	1	2	
		4	3	3	
		3	2	2	
		3	2	2	
		5	3	4	
		2	1	1	
		3	1	2	
		2	2	2	
		2	2	2	
		2	2	2	
		3	2	6	
		1	1	1	
		2	1	1	
Total	1		18		
62.5			3	3	4
			1	1	1
			4	3	3
			8	2	3
			3	1	1
			3	3	3
			3	2	2
			2	2	1
			3	3	6
			2	2	1
			2	1	2

CONFIDENTIAL

OP-08-747 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
IN PANELS WITH RADIUS OF 30° AND FEET

Soviet

LAST NUMBER
STRINGS PER SHEET NUMBER
PRIORITY NUMBER

XXXXXX Sheet 24 of 37

XXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
	2	1	1			
	7	2	3			
	3	2	5			
	4	3	4			
	2	2	1			
	4	4	6			
	5	3	10			
Total			18			
62.6						
	1	1	1			
	4	3	5			
	2	2	1			
	10	4	10			
	3	2	3			
	2	1	1			
	2	1	1			
	1	1	1			
	5	2	2			
	4	3	2			
	1	1	1			
	2	1	1			
	2	2	2			
	2	2	1			
Total			14			
63.1	6	3	2	2	1	
	9	3	3	3	3	
	7	2	1	1	1	
	1	1	1			
	1	1	1			
	1	1	1			
	4	2	3			
	4	1	3			
	4	3	4			

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
				4	3	4
				5	3	4
				1	1	1
				1	1	1
				2	2	4
				1	1	2
				3	2	2
				3	2	2
Total			3			16
63.2						
	1	1	1			
	1	1	1			
	3	2	4			
	1	1	2			
	3	3	2			
	3	2	3			
	6	2	8			
	1	1	1			
	3	2	5			
	2	2	1			
Total						10
63.3	5	3	3	3	2	9
				5	3	3
				4	1	3
				3	3	3
				2	2	2
				2	2	7
				1	1	1
				1	1	1
				1	1	1
				2	2	1
				1	1	2
				1	1	1
				2	2	1

ORDNQ-737 18 FEB 48
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

HORING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 25 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, Q-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		1			13
63.4	5	4	1	1	1
	5	3	1	1	1
	5	3	1	1	1
	4	3	1	1	1
	9	2	1	1	1
	8	3	1	1	1
		1	1	1	
		3	1	1	
		2	2	2	
		2	1	5	
		3	3	8	
		2	2	1	
		3	2	1	
		2	2	2	
		3	2	3	
		4	3	5	
		2	1	1	
Total	6				17
63.5	4	3	3	2	3
	8	3	1	1	1
	8	5	3	2	4
		3	3	7	
		1	1	1	
		1	1	1	
		4	2	7	
		1	1	1	
		2	1	1	
		5	2	4	
		3	2	2	
		1	1	1	
		1	1	1	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total		3			17
63.6	5	4	2	1	1
		4	1	4	
		8	4	3	
		2	1	1	
		1	1	1	
		3	2	3	
		7	5	5	
		1	1	1	
		2	1	1	
		4	3	3	
		1	1	1	
		1	1	1	
		2	1	1	
Total	1				16
TOTALS					
30' Radius		319			1518
CONFIDENTIAL					

ORD-94-787 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION

SHELLS IN PANELS

R-1112-21

LOT NUMBER

DATE 12 June 52

FIRING RAMP NUMBER

PRIORITY NUMBER

XXXXXX Sheet 26 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADII OF 60° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.2			1	1	1
Total					1
2.3			3	2	3
Total					1
15			4	2	2
Total					1
18	4	2			
Total	1				
19			2	1	2
Total					1
20			1	1	1
Total					1
21			4	2	2
Total					1
22			3	2	2
Total					1
23	14	4	1	1	1
Total	1				1
24			2	1	1
			2	1	1
			2	2	1
			1	1	1
			5	4	5
Total					5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.5	5	3	3	3	2
			2	1	1
			2	1	1
			3	2	3
			3	1	1
			2	1	1
			4	2	1
			1	1	1
			2	1	1
			3	2	2
			3	2	2
			2	1	2
			3	1	1
			2	1	1
Total	1				14
26	4	4	3	2	3
# 19	10	2	2	2	1
			4	3	4
			3	2	1
			2	1	1
			3	2	3
			1	1	1
			3	2	3
			2	1	2
			2	1	1
			3	2	2
			5	3	2
			3	2	1
			2	2	1
			5	4	2
Total	2				15

CONFIDENTIAL

ORDBQ-737 18 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADII OF 60' AND FEET

LOT NO.

DAT 12 June 52

FIRING RING NUMBER

PRIORITY ALMSSR

XXXXXX XXXX Sheet 27 of 37

XXXXXX XXXX Round No. 11

RACKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27	6	4	4	2	2
	8	6	4	3	10
	4	3	4	3	2
		2	1	1	
		2	2	1	
		6	4	7	
		4	1	2	
		2	2	1	
		5	3	2	
		3	1	2	
		3	1	1	
		4	3	9	
		12	4	8	
Total		3		13	
28	13	7	2	1	1
	9	5	1	1	1
	9	5	1	1	1
	6	6	1	1	1
	7	6	1	1	1
		2	1	1	
		2	1	1	
		3	2	1	
		2	1	1	
		3	2	2	
		6	3	4	
		1	1	1	
Total		5		13	
29	7	5	2	2	1
	5	3	3	2	6
	24	8	2	2	1
	12	5	1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	7	3	3	2	1
	5	2	9	3	6
	4	3	2	2	1
	8	4	3	2	1
	7	4	4	3	4
		5	2	5	
		2	1	1	
		3	3	2	
		4	2	2	
		2	2	2	
		2	1	1	
		4	2	2	
		3	1	1	
		3	1	1	
		3	2	1	
		3	2	3	
Total		9		21	

CONFIDENTIAL

ORDOG-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
IN PANELS WITH RADIUS OF Soviet 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30	10	4	2	2	2
	8	6	1	1	2
	10	6	1	1	2
	12	5	2	1	1
	4	6	1	1	1
		1	1	1	
		1	1	1	
		3	2	3	
		2	2	3	
		2	1	4	
		4	4	6	
		2	2	2	
		2	2	1	
		1	1	2	
		3	2	10	
		1	1	1	
		2	1	2	
Total	5		17		
31	10	8	1	1	1
	7	4	4	6	8
	8	6	3	2	2
	7	6	3	2	3
	7	4	2	2	2
		3	2	2	
		3	2	2	
		1	1	1	
		3	2	3	
		3	2	2	
		2	1	1	
		3	5	4	
		5	3	3	
Total	5		14		

G-2000-3-184-8

LOT NUMBER

DATE 12 June 52

FIRING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 28 of 37

XXXXXXX Round No. 11

SHELL NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
32	10	6	2	2	1
	8	6	6	4	2
	11	6	2	2	3
		6	4	6	
		1	1	1	
		3	1	2	
		3		2	
Total	3		7		
33	10	6	1	1	1
	12	8	2	2	2
	10	5	5	3	4
	8	6	3	2	2
	26	8	1	1	1
	12	4	8	5	7
	7	5	1	1	1
	10	4	1	1	1
	8	6	5	3	5
	12	6	1	1	2
		3	3	2	
		4	3	5	
		3	2	2	
		3	3	2	
		6	4	6	
		5	2	4	
		2	2	4	
		3	2	4	
Total	10		22		

CONFIDENTIAL

ORCBQ-737 16 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

~~100~~ Firing Record Number.

DATE 12 June 52

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADII OF

624 ANG

FEET

~~EXTRACT~~ Sheet 29 of

ROCKET NUMBER

REGULATIONS

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	DEPTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34	14	6	2	2	2		8	4	4	3	4
	24	9	1	1	1		15	10	2	2	2
	18	8	2	2	3		6	4	1	1	1
	8	6	4	4	2		20	6	4	3	2
	16	7	5	4	3		16	8	4	1	1
	12	4	2	1	2		18	7	6	4	6
	8	5	2	2	4		5	4	3	2	2
	20	5	4	1	1		12	6	3	2	2
	5	4	2	1	1		12	4	4	2	2
	9	4	3	1	1		16	8	4	4	4
	10	6	1	1	1		14	8	2	2	2
	12	9	1	1	1		14	8	2	2	2
	8	7	1	1	1		6	4	1	1	1
			5	3	4				1	1	1
			8	4	7				4	3	2
			6	6	6				1	1	1
			5	3	2				4	2	4
			2	2	3				4	2	2
			2	1	1				1	1	1
			2	1	1				2	2	2
			1	1	1				3	2	2
			2	1	1				4	2	2
			1	1	1				6	4	7
			2	2	2				2	2	2
			4	3	5				6	4	2
			2	1	1				1	1	1
Total		13			27				5	2	3
									1	1	1
									3	3	4
35	8	6	5	2	2				2	2	2
	16	16	1	1	1				1	1	1
	8	6	1	1	1				2	2	2
	11	4	3	2	3				2	2	2
	14	6	2	2	2				4	2	3

ORD-EG-737 10 PER 48
FORMERLY DPDUX-F-101CONFIDENTIAL
PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING ROUND NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 621 AND FEET

XXXXXX Sheet 30 of 37
XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH		PENETRATIONS	LENGTH	WIDTH	DEPTH
					1	1	1		
					4	4	4		
					1	1	2		
					1	1	1		
					2	1	1		
Total		18				44			
36		10	4	4	3	3			
		10	6	4	3	3			
		8	5	5	3	2			
		16	10	4	2	2			
		8	4	3	1	2			
					2	1	1		
					1	1	1		
					1	1	2		
					1	1	1		
					1	1	1		
					3	3	4		
					1	1	1		
					2	2	1		
					2	2	2		
					3	2	3		
					4	3	2		
					5	4	3		
					4	2	2		
Total		5				21			
37		7	4	2	2	4			
					1	1	1		
					1	1	1		
					1	1	1		

CONFIDENTIAL

Total

?

ORD-6-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

12 JUNE 52
FIRING RING NUMBER
PRIORITY NUMBER
XXXXXX Sheet 31 of 37
XXXXXX Round No. 11
ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 60° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
40			2	2	2
			3	2	1
			7	4	6
			7	5	5
			3	2	3
Total					5
41	13	5	4	2	2
	14	9	6	5	7
	4	12	4	4	2
			2	1	1
			3	2	2
Total	3				5
42	8	3	4	2	2
			2	2	1
			2	2	2
			9	3	3
			1	1	1
			4	2	2
Total	1				6
43			1	1	1
			3	1	1
			2	2	2
			1	1	1
Total					4
44	6	4	2	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1
Total	1				5

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
45			1	1	1
			2	2	1
			2	2	1
			1	1	1
			3	2	2
			4	2	2
Total					6
46			5	4	3
			1	1	1
			4	4	2
			2	2	1
			2	2	5
			3	3	1
Total					6
47			4	4	1
			2	2	1
			4	2	2
			2	2	2
			3	2	2
Total					5
48			4	2	3
			2	2	1
			4	2	3
Total					3
49			2	2	1
			2	1	1
			4	2	2
			1	1	1
			1	1	1
Total					6

GDRG-737 19 FEB 46
FORMERLY SPOTZ-F-281

GDRG-737 19 FEB 46

DATE 12 June 52

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT 90°

Soviet
IN PANELS WITH RADIUS OF

60°

AND

FEET

ZOOLOGY Sheet 32 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50			2	2	2
			1	1	1
			4	2	3
			4	4	2
			3	2	2
			2	2	2
			1	1	1
			4	3	3
Total					8
51			1	1	1
			2	1	1
			2	2	2
			4	4	6
			1	1	1
			4	3	2
			2	2	2
Total					7
52			1	1	1
			1	1	1
			1	1	1
			4	2	2
			1	1	1
			4	3	5
			2	2	2
			4	3	2
			4	2	2
Total					9
53			3	3	5
			5	4	4
			4	4	4
			4	3	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
53					
Total			3	2	2
54			1	1	1
			1	1	1
			2	2	2
			2	1	1
Total					7
55			4	3	2
			1	1	2
			4	2	2
			1	1	1
			2	2	2
			3	2	2
			4	3	1
Total					7
56			4	2	2
			2	1	1
			1	1	1
			1	1	1
			2	1	1
			3	3	2
			3	3	2
Total					7
57			3	2	2
			1	1	1
			4	3	2
			1	1	1

ODDBG-737 10 FEB 48
FORMERLY SPOTZ-F-201

PENETRATION SHELLS IN PANELS

LOT NUMBER

DATE 12 June 52

FIRING READING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

X-XXXXXX Sheet 33 of 37

X-XXXXXX Round No. 11

IN PANELS WITH RADIUS OF 60 FEET AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
57 cont			1	1	1
			3	2	2
			2	2	3
			2	2	2
			2	2	1
			2	2	2
Total					10
58.1			2	1	1
			3	2	2
			1	1	1
			1	1	1
			2	2	2
Total					5
58.2	9	7	2	2	2
	10	8	1	1	1
			4	2	2
			4	2	3
Total		2			4
58.3	6	4	5	4	3
			2	1	1
			3	1	1
			4	2	2
			2	1	2
			2	1	1
Total		1			
59.1	4	4	2	2	2
			1	1	1
			6	6	4
			4	2	3
			3	2	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.1					
			4	2	2
			3	2	1
			4	2	2
			1	1	1
			2	1	1
			3	1	2
			3	2	2
			3	2	2
			4	2	2
			1	1	1
			5	5	6
			2	2	2
Total					15
59.3			4	8	1
					1
			2	2	1
			2	2	4
			2	2	2
			2	1	2
			4	2	2
			1	1	1

ORDC-727 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

1ST NOV

DATE 12 June 52

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 34 of 37

XXXXXX Round No. 11

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm O-462A LOADED AT/90
Soviet

IN PANELS WITH RADII OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 59.3			1	1	2
			4	2	2
Total	1				10
60.1			1	1	1
			1	1	1
			2	2	2
			3	3	3
			1	1	1
			4	4	4
			1	1	1
			4	3	4
			4	2	4
			2	2	2
			3	1	1
			1	1	1
			4	2	2
			1	1	1
			1	1	1
			7	3	5
			4	2	3
			4	1	1
			4	3	3
			2	2	2
			1	1	1
			2	2	2
			2	2	2
			1	1	1
			2	1	1
			2	1	1
Total			6	2	6
					27
60.2			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 60.2			6	3	2
			2	1	2
			2	1	1
			1	1	4
			1	1	1
			5	2	4
			8	2	4
			1	1	1
			1	1	1
			2	2	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			5	2	2
			4	2	3
			6	3	2
			3	2	1
Total					19
60.3			1	1	1
			4	2	2
			4	2	2
			3	2	1
			4	3	4
			2	2	1
			3	2	1
			1	1	1
			1	1	1
			4	3	2
			5	2	4
			4	4	2
			2	2	2

ORDB-727-13 FEB 68
FORMERLY SPOTZ-P-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 12 June 68

FIRING READING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet 60° AND FEET

XXXVXXIX Sheet 35 of 37

CHXXXXXX Round No. 11

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS			PENETRATIONS			PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
cont							cont						
60.3				12	2	6	61.2				2	2	2
				1	1	1					2	2	1
				2	1	1					6	3	2
				6	3	3					2	2	8
				5	2	2					2	2	2
				1	1	1					1	1	1
				2	1	1					2	2	2
Total				21							10	5	7
											2	2	2
61.1				3	2	2					3	2	2
				1	1	1							
				2	1	1							
				1	1	1							
				2	1	2							
				4	2	2							
				1	1	1							
				7	3	3							
				2	2	2							
				4	3	5							
				2	1	1							
				2	2	2							
				2	2	3							
				3	2	2							
Total				16									
61.2				4	4	2					2	1	1
				4	3	4					2	2	2
				1	1	1					1	1	1
				3	2	2					6	3	3
				1	1	1					3	2	2
				7	5	6					4	2	2
				1	1	1					7	5	4
											1	1	1

ORDNANCE-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

ROCKET NUMBER

DATE 12 June 58

FIRING READING NUMBER

PRIORITY NUMBER

XXCV/XXX Round No. 11

XXXXX/XXX Sheet 36 of 37

R-1182-L

PENETRATIONS OF SHELL 122 mm, O-462A LOADED AT/90

IN PANELS WITH RADII OF Soviet 50' AND FEET

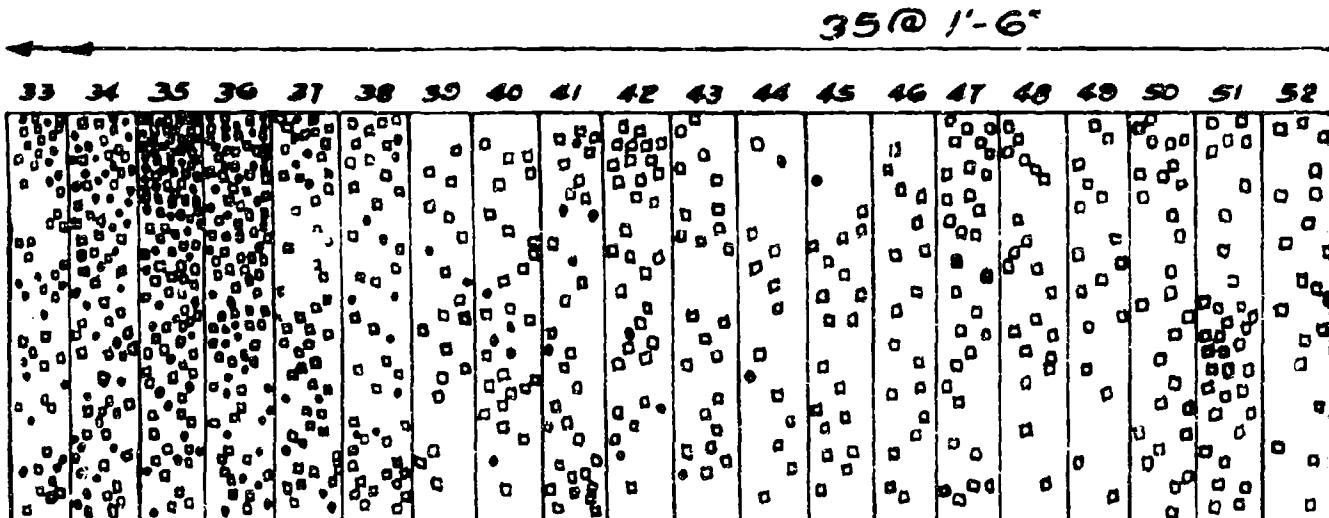
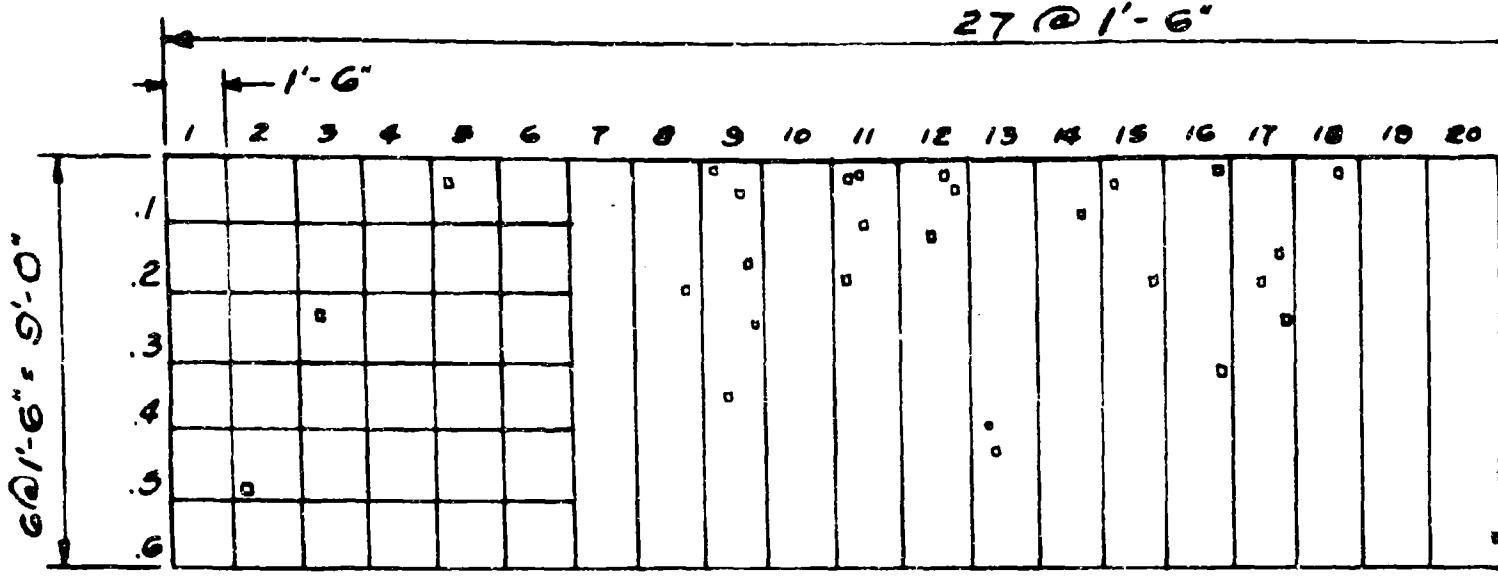
PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 62.1			2	2	3
			2	2	5
			7	3	4
			1	1	1
			4	2	3
			1	1	1
			1	1	1
			1	1	1
Total					16
62.2	6	4	4	2	2
	4	3	2	2	2
			4	2	2
			4	1	1
			1	1	1
			4	3	2
			1	1	1
			4	2	4
			2	1	2
			4	2	2
			2	2	2
			1	1	1
			4	2	2
Total		2			13
62.3			7	3	2
			1	1	1
			1	1	1
			4	4	4
			9	4	3
			6	4	3
			1	1	1
			4	3	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
cont 62.3			1	1	1
			3	3	1
			5	3	4
			6	2	2
			4	2	5
Total					14
63.1	7	3	6	3	3
			4	2	3
			6	3	5
			3	2	3
			1	1	1
			4	3	7
			4	2	7
			1	1	1
			2	2	2
			4	2	3
			1	1	1
			1	1	1
			7	2	5
			4	1	4
			2	1	1
			4	3	3
Total					21
63.2	7	2	1	1	1
			7	3	2
			8	1	1
					1
					6

CONFIDENTIAL

PANEL A

30 FT RADIUS 180° AR



1" NO. 3 PINE BOARDS (DRESSED) PLACED VEE

DATE - 12 JUNE 52 RD. NO. 11

SHELL, 122MM, SOVIET

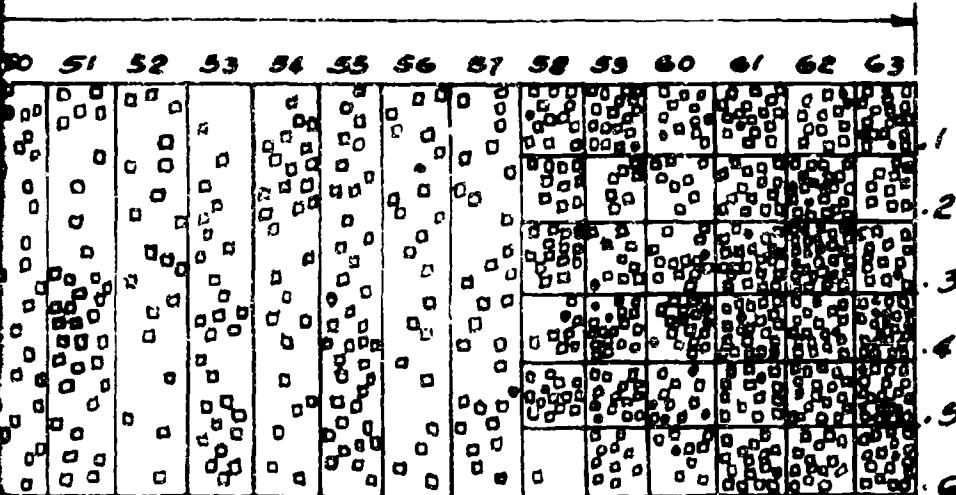
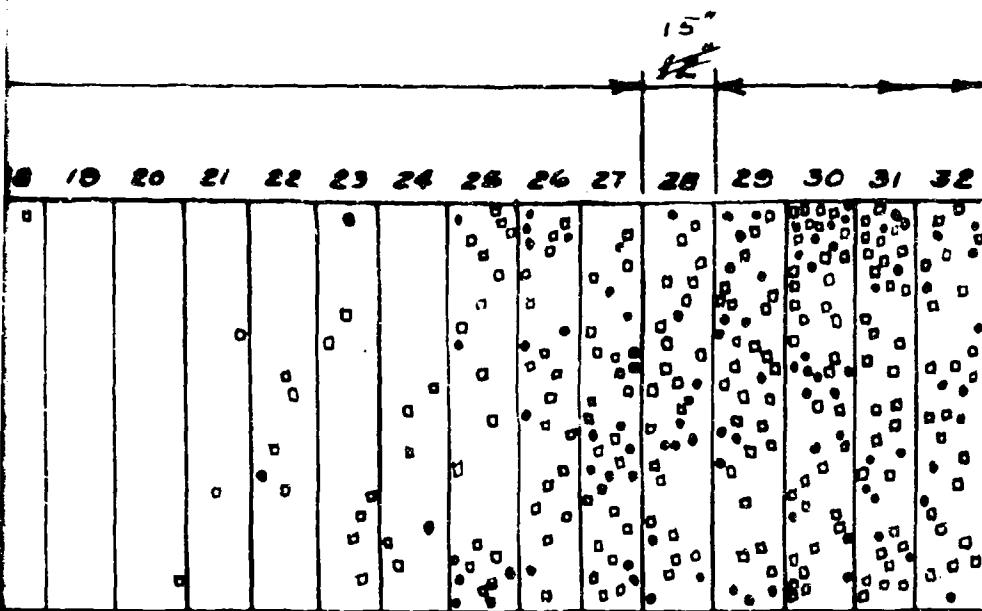
POSITION OF SHELL - HORIZONTAL

● PERFORATION: 2
□ PENETRATIONS 15

CONFIDENTIAL

30° ARC

2



D VERTICALLY.

RANGE OPERATIONS SECTION

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT. RADIUS.)

ABERDEEN PROVING GROUND MD.

10

OCT 27, 1944

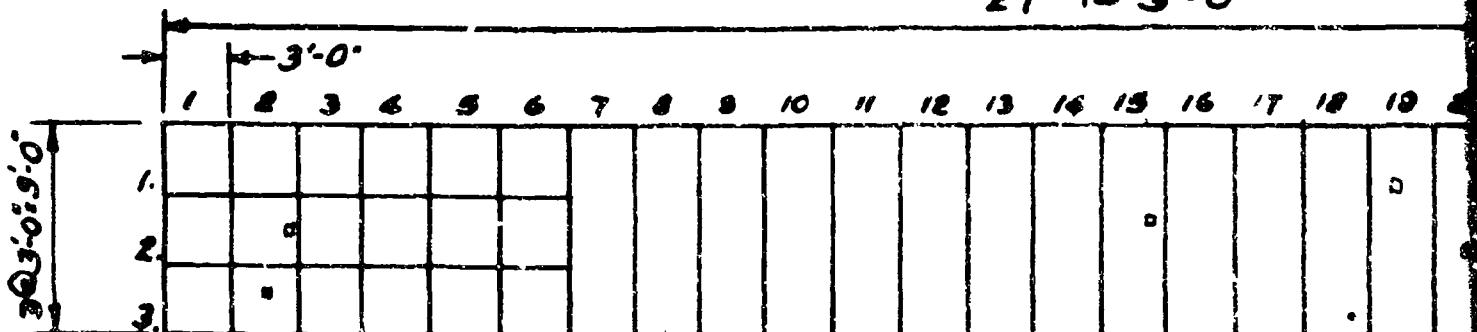
APG 11876-15 PR

CN. 319
NS 1518

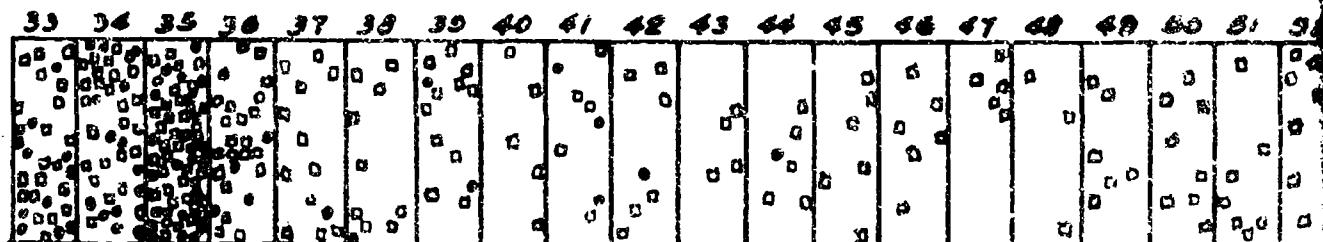
PANEL B

60 FT. RADIUS 180° AR

27 @ 3'-0"



35° 3'- 0"

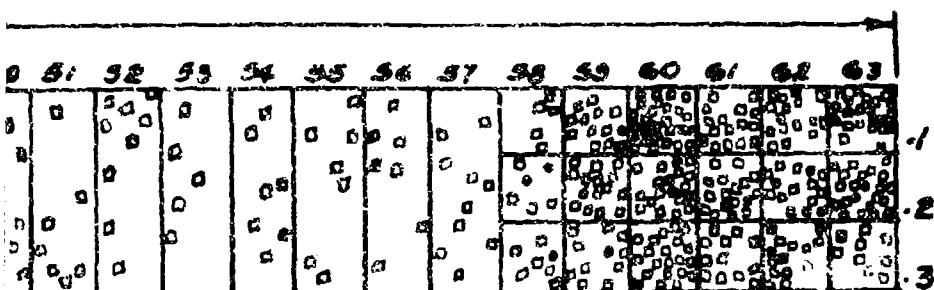
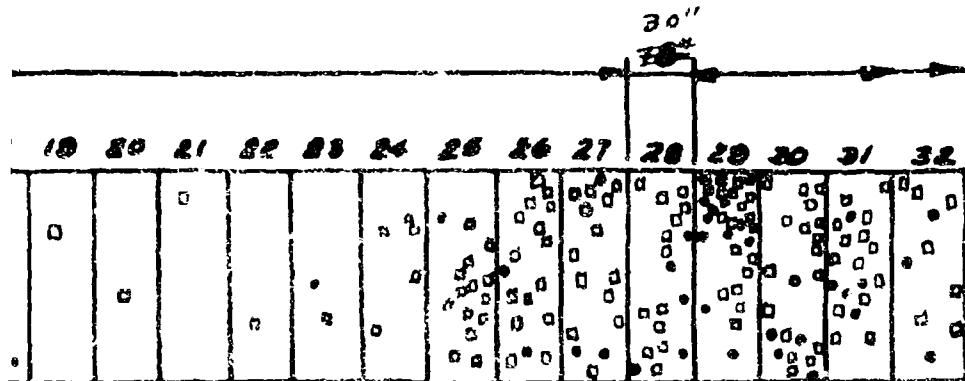


1" NO. 3 PINE BOARDS (DRESSED) PLACED VERTICALLY

DATE - 12 JUNN 52 RD. NO 11
SHELL, 122 MM, SOVIET
POSITION OF SHELL - HORIZONTAL

PERFORATIONS - 10
 PENETRATIONS - 64

1° ABC



0 VERTICALLY.

2

RANGE OPERATIONS SECTION

- 101
- 640

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

DAERDEEN PROVING GROUND, MD.
OCT. 27, 1964 APG 11876-14 PR

115B

ARMING RECORD NO. 3-11322
LOADING NO. 3

ROUND NO. 17

4 June 1953

SHELL, 100, 100mm, Soviet
HEAT, 2-012, Ammonium Nitrate 90% - TNT 10%

SHELL MARKINGS

DATA

915
4-5
200

DATA

(none)

DATA

Unfinished band

Shell has one split rotating band.

Weight of shell w/o C. & fuzes = 46.00 lbs.
Less fuzes = 43.00 lbs.

Distance from shell to the center of the 0.600" aluminum flash target = 20.75 ft.

Shell before loading is marked with black ink mark No. 40132.

Recovered from ground after impact and shell marked with black ink
at Photo Lab, 100 ft. off target.

CONFIDENTIAL



FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet, AT/90 Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	N.R.		33	N.R.	
2	0+		18	21	2143	34	11	
3	N.R.		19	2		35	4(2)	2485
4	0+		20	N.R.		36	N.R.	
5	3		21	3	2607	37	0+	2565
6	0+		22	1		38	N.R.	
7	6	2575	23	N.R.		39	40	2696
8	N.R.		24	2	2794	40	N.R.	
9	N.R.	2407	25	14	2745	41	9	2524
10	1		26	12		42	N.R.	
11	N.R.		27	3		43	N.R.	
12	N.R.		28	N.R.		44	N.R.	2423
13	3	2532	29	N.R.		45	N.R.	
14	0+		30	0+		46	N.R.	
15	N.R.		31	53	2483	47	10	2745
16	N.R.		32	N.R.		48	5	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity and \pm 3.3 % for the lowest velocity.

Sheet 1 of 26

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. RogersDate Fired 4 June 1953Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	9	2745	65	38	2696	81	14(2)	2407
50	13	2607	66	16		82	8	2483
51	N.R.	2652	67	1	2483	83	4	
52	169	2652	68	2		84	127	2695
53	8		69	28	2696	85	N.R.	
54	N.R.		70	18	2696	86	33(2)	2794
55	N.R.	2794	71	5	2483	87	3	
56	4(2)		72	N.R.		88	2	
57	2		73	10		89	54	2794
58	38	2607	74	47		90	N.R.	
59	12		75	9		91	N.R.	
60	N.R.		76	14		92	N.R.	
61	32		77	N.R.		93	N.R.	
62	2		78	29	2696	94	9	
63	N.R.		79	N.R.		95	N.R.	
64	N.R.		80	62(2)		96	83	2696

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

N.R. - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Initial velocity inaccuracies are less than + 5.8 % for the highest velocity
- 3.3 % for the lowest velocity.Sheet 9 of 96

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 4 June 1955

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	8		113	1		129	0+	
99	31	2607	114	N.R.		130	8	
99	N.R.		115	3		131	N.R.	
100	N.R.		116	21		132	0+	
101	N.R.		117	N.R.		133	N.R.	
102	N.R.		118	46		134	5	
103	N.R.		119	9		135	9	
104	N.R.		120	4	2335	136	5	
105	N.R.		121	1	2524	137	N.R.	
106	N.R.		122	8	2524	138	4	2565
107	3	2524	123	N.R.		139	7	
108	14	2696	124	54		140	35	2485
109	N.R.		125	N.R.		141	N.R.	
110	5		126	4		142	0+	
111	N.R.		127	11	2696	143	26	
112	N.R.		128	81	2696	144	N.R.	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

N.R. - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity
and \pm 3.3 % for the lowest velocity.

Sheet 10 of 26

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FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 4 June 1953Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	31	2607	161	N.R.		177	N.R.	
146	4		162	10		178	N.R.	
147	N.R.		163	2	2235	179	0+	
148	17	2565	164	6	2696	180	142	
149	5		165	20(2)	2652	181	N.R.	
150	6		166	1		182	N.R.	
151	62	2696	167	N.R.		183	N.R.	
152	0+		168	N.R.		184	N.R.	
153	16		169	10		185	2	
154	40		170	2		186	17	2006
155	14	2565	171	2		187	144	
156	1		172	219		188	N.R.	
157	N.R.	2301	173	58(2)	2235	189	9	
158	N.R.		174	N.R.		190	3	
159	5(2)	2565	175	95		191	3	
160	7		176	4		192	N.R.	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

N.R. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity and \pm 3.3 % for the lowest velocity.Sheet 11 of 26

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
193	N.R.	2565	209	7		225	5	
194	66(2)	2565	210	N.R.		226	12	
195	41		211	22		227	0+	
196	0+		212	17		228	3	
197	N.R.		213	21		229	6	
198	N.R.		214	N.P.		230	33(2)	
199	73		215	43		231	1	
200	N.R.		216	N.R.		232	7	
201	N.R.		217	N.R.	#	233	5	
202	8		218	73(3)		234	0+	
203	4	2268	219	30		235	3	
204	23		220	N.R.		236	12	
205	3		221	N.R.		237	120	
206	6		222	N.R.		238	9	
207	N.R.		223	N.R.		239	N.R.	
208	N.R.		224	2		240	N.R.	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity and \pm 3.3 % for the lowest velocity. 5 8

Sheet 36 of 66

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box Data

Proof Director Mr. O. L. Rogers Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
241	N.R.		257	N.R.		273	47	
242	N.R.		258	N.R.		274	230(2)	
243	N.R.		259	17		275	7	
244	2		260	45		276	N.R.	
245	N.R.		261	N.R.		277	2	
246	1		262	22		278	N.R.	
247	27		263	N.R.		279	6	
248	2		264	3	2552	260	4	
249	1		265	5	*	281	38	
250	5		266	43		282	13	
251	N.R.		267	24		283	165	
252	7		268	9		284	34	2371
253	N.R.		269	21		285	13	
254	10		270	10		286	74(2)	
255	22		271	10		287	2	
255	47		272	4		288	37	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity and \pm 5.3 % for the lowest velocity. 6 8

Sheet 15 of 26 CONFIDENTIAL 114

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Found No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
289	28		305	0+		321	0+	
290	N.R.		306	N.R.		322	N.R.	
291	21		307	N.R.		323	4	
292	9		308	11(2)	2607	324	N.R.	
293	1(3)		309	N.R.		325	N.R.	
294	25		310	7	2696	326	123	
295	29		311	6		327	N.R.	2745
296	9	2445	312	2	2524	328	3	
297	28		313	1		329	N.R.	2483
298	3		314	3		330	N.R.	
299	45(2)		315	2		331	N.R.	
300	3		316	3		332	N.R.	
301	3		317	3		333	6	2696
302	21		318	N.R.		334	N.R.	
303	9		319	12		335	N.R.	
304	37		320	31		336	N.R.	

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity
 and \pm 3.3 % for the lowest velocity. 7 8

Sheet 14 of 26

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 4 June 1953

Distance from detonation point to target 22.75 feet. Round No. 17

Round statically detonated and velocity obtained by Photographic Methods.

Average velocity 2565 ft/sec.

(2) - total weight of two pieces.

N7 - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.8 % for the highest velocity and \pm 3.3 % for the lowest velocity. 8

Sheet ~~15~~ of ~~26~~

4847 08 481928ZM PROG 40 040-40 40 354

ONCRG-287 10 PER AB
FORMERLY ONOTZ-F-281

PENETRATION OF SHELLS IN PANELS

12-11-30-21-1
LOT NO. 1 DATE June 53
FIRING POG NUMBER
PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, D-452A LOADED AT/90

XXXXXX Sheet 1 of 34

Soviet

XXXXXX Round No. 17

IN PANELS WITH RADIUS OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.3			1	1	1
Total					1
7			1	1	1
Total					1
8			2	1	2
Total					1
9			2	1	1
			3	2	2
Total					2
12			2	1	1
Total					1
14			1	1	2
Total					1
17			2	1	1
			4	2	2
Total			1	1	2
19			3	2	2
			3	3	1
Total			1	1	1
					3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
20	6	4	1	1	1
	20	6	1	1	1
Total		2			2
21			2	2	2
			2	1	1
Total			.	.	2
22			1	1	1
			3	2	1
			3	1	2
Total			3	2	2
					4
23	7	6	3	2	2
	12	4	1	1	1
			4	2	2
			1	1	1
Total			1	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	1
			2	1	2
			2	1	1
Total			2		14
					115

DRCG-747 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER
FIRING RECORD NUMBER

DATE June 53

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet IN PANELS WITH RADII OF 30° AND FEET

XXXXXX Sheet 2 of 34
XXXXXX Round No. 17
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
24	8	5	2	1	1
	6	5	3	2	3
	4	4	2	1	1
	4	3	1	1	1
	3	2	4	2	4
			2	2	2
			1	1	1
			2	2	1
			1	1	2
			7	4	5
			1	1	1
			2	1	1
			3	3	3
			1	1	1
			2	2	3
			3	2	3
			3	2	4
			3	2	3
			3	2	6
			2	1	1
			2	1	2
			2	1	1
			2	1	2
			1	1	1
			2	2	2
			5		25
25	4	4	3	2	3
	6	4	2	1	1
	7	4	1	1	2
	7	6	1	1	2
	13	12	2	1	2
	6	5	2	1	2
			2	1	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			3	3	4
			1	1	1
			4	3	6
			2	1	2
			1	1	1
			3	2	5
			1	1	1
			1	1	1
			4	2	6
			1	1	1
			2	2	4
			4	2	4
			1	1	1
			1	1	1
			2	2	2
			3	2	2
Total		6			24
26	3	2	2	2	2
	3	2	2	1	2
	7	4	2	1	1
	4	3	4	3	4
	5	4	2	2	2
	5	4	2	1	1
	19	9	1	1	1
	5	4	1	1	1
	6	4	3	1	3
			3	3	4
			1	1	2
			4	4	4
			1	1	1
			1	1	2
			1	1	1

CODE-737 10 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS & SHELLS IN PANELS

DATE 4 June 53

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
SOVIET

LOT NUMBER

FIRING ID NUMBER

PRIORITY NUMBER

Sheet 3 of 34

Round No. 17

IN PANELS WITH RADIUS OF 301 FEET AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		2	1	2	
		1	1	1	
		2	2	2	
		3	2	4	
		2	1	2	
		1	1	1	
		2	1	1	
		1	1	1	
		1	1	1	
		2	2	4	
		2	1	1	
		2	1	1	
Total	9		27		
27	5	4	3	2	2
	5	4	2	1	2
	4	2	1	1	1
	6	4	1	1	2
	5	3	3	1	2
	6	4	3	1	4
	8	4	3	2	4
	4	4	4	3	3
	4	3	2	1	2
	8	6	2	2	2
	3	3	4	2	2
	6	5	3	3	3
		2	1	1	
		2	2	3	
		3	2	3	
		1	1	1	
		1	1	1	
		3	2	2	
		1	1	1	
		4	3	2	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		5	4	4	4
		3	2	4	4
		1	1	1	1
		1	1	2	2
		3	2	3	3
		2	2	2	2
		1	1	1	1
		4	3	3	3
		2	2	2	2
		4	3	3	3
		3	2	3	3
		1	1	1	1
		2	1	1	1
		1	1	1	1
		1	1	1	1

B-1172-2

CROSS-737 10 FEB 46 FORMERLY SPOTZ-F-281						LOT NUMBER	DATE 4 June 53		
PENETRATIONS OF SHELLS IN PANELS						FIRING ROD NUMBER			
PENETRATIONS OF SHELL 122mm- 0-462A LOADED AT/90						PRIORITY NUMBER			
Soviet 30' AND FEET						INDIVIDUAL SHEET 4 of 34			
IN PANELS WITH RADIUS OF 30' AND FEET						BACKPACK SHEET Round No. 17			
						ROCKET NUMBER			
Total	6				21				
29	5	5	3	2	5		2	1	1
	10	4	2	2	2		4	3	3
	6	5	3	2	3		2	1	1
	13	5	2	2	4		3	2	2
	4	3	2	1	2		3	2	3
	5	3	5	4	6		2	1	1
	4	3	3	1	2		2	1	1
	5	3	3	2	2		14		40
	12	6	3	2	2		30	7	2
	4	4	1	1	1		10	6	3
	7	3	2	1	1		6	4	3
	9	4	1	1	1		4	4	2
	7	5	4	3	6		8	6	1
	6	5	2	2	2		5	3	1
		1	1	1			5	3	2
		4	3	2			4	4	1
		1	1	1			8	6	3
		2	1	1			7	5	1
		2	2	3			6	4	2
		2	2	1			8	7	1
		1	1	1			12	7	1
		1	1	1			12	9	2
		5	3	8			4	4	1
		3	2	4			7	3	2
		2	1	1			8	4	2
		1	1	2			8	5	1
		3	2	3			5	3	1
		2	3	2			11	8	6
		3	2	2			6	4	5
		3	2	6			6	5	2
		3	2	4			4	3	1
		4	2	6			3	2	3

CABIN-757 IS FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS SHELLS IN PANELS

PENETRATIONS OF SHELL 122-mm, O-462A LOADED AT/90
Soviet
IN PANELS WITH RADIUS OF 30' AND FEET

LOT NUMBER	DATE 4 June 48
FIRING ROLL NUMBER	
PRIORITY NUMBER	
WIRE NUMBER Sheet 5 of 34	
SHOOT NUMBER Round No. 17	
ROCKET NUMBER	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH
			3	2	3				2	1	1
			1	1	1				1	1	1
			1	1	1				3	2	3
			1	1	2				3	2	4
			2	2	4				2	1	1
			1	1	1				4	3	3
			4	3	3				1	1	1
			1	1	1				5	3	3
			1	1	1				1	1	2
			1	1	1				2	1	3
			1	1	1				4	3	3
			3	1	2				1	1	1
			1	1	1				3	2	4
			2	1	1				8	4	6
			4	3	6				8	3	2
			3	2	2				10	7	2
			1	1	1				8	5	2
			3	2	5				1	1	1
			4	3	6				1	1	1
			3	1	4				2	1	1
Total		23			44				1	1	1
									3	3	4
31	6	4	3	3	2				3	2	3
	5	5	3	2	4				3	2	5
	5	3	2	1	1				3	2	1
	6	6	3	2	5				Total	10	37
	8	4	3	2	3						
	5	3	2	1	3				32	3	4
	5	3	3	2	6					2	1
	8	5	4	3	2					3	3
	9	7	3	2	5					5	3
	12	6	3	2	4					3	6
			1	1	1					1	1
			3	2	7					1	1

OROBG-737 19 FEB 48
FORMERLY SPOTZ-F-261

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, Q-462A LOADED AT/90

Soviet
IN PANELS WITH RADIUS OF 30' AND FEET

LOT NUMBER DATE 4 June 53
FIRING RECORD NUMBER
PRIORITY NUMBER
15XXXXX Sheet 6 of 34
SPOTZ-F-261 Round No. 17
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
		2	1	1	
		3	2	2	
		3	2	4	
		1	1	2	
		4	2	2	
		1	1	2	
		2	2	3	
		2	2	3	
		5	2	2	
		1	1	1	
		2	1	1	
		3	1	1	
		6	2	2	
		2	2	3	
		1	1	2	
		1	1	1	
		2	3	3	
		5	3	3	
		2	1	2	
		2	2	2	
		1	1	2	
		5	4	6	
		3	2	3	
		3	1	1	
		1	1	1	
Total	7		32		
33	9	8	2	2	2
	5	4	1	1	1
	7	4	1	1	1
	8	5	1	1	1
	5	4	2	1	1
	6	4	2	2	4
	4	4	3	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	15	8	1	1	1
	4	4	4	4	4
	5	3	2	2	2
	10	6	3	3	4
	10	5	7	3	7
	5	4	3	1	1
	6	3	2	1	1
	10	7	3	2	4
	13	5	3	2	2
	4	4	1	1	1
	15	7	1	1	1
	4	3	2	1	2
	8	4	1	1	1
	6	4	5	3	8
	4	4	5	3	6
	17	7	5	4	6
			9	4	4
				1	1
				3	2
				4	1
				1	1
				4	2
				2	1
				2	1
				2	1
				2	1
				5	5
				3	2
				2	1
				2	1
				3	1
				4	2
				4	3
				4	2

PENETRATIONS SHELLS IN PANELS

B-11222

REF ID: A87-349

DATE 4 June 63

LOT NUMBER
FIRING RAMP NUMBER
PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet
IN PANELS WITH RATIO OF 30' AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1		8	5	1	1	1
			3	2	3		4	3	3	2	2
			3	1	2		8	6	1	1	1
			2	1	1		9	6	2	2	2
Total	23				45		8	4	3	2	2
							10	4	1	1	2
34	4	3	3	3	2		14	6	3	2	4
	13	5	2	2	1		3	3	5	3	2
	6	4	2	1	1		5	4	4	3	6
	8	4	3	2	2		6	4	4	2	2
	5	4	3	2	4		10	6	1	1	1
	4	3	1	1	1		8	3	2	1	2
	10	4	1	1	1		6	4	4	4	6
	10	4	3	2	2		7	7	3	2	2
	10	5	3	1	2		6	4	3	2	2
	8	6	1	1	1		8	4	3	2	3
	7	5	1	1	1		5	3	2	2	1
	4	3	2	1	1		12	6	1	1	1
	9	4	1	1	1		5	5	4	2	2
	8	4	1	1	1		12	4	1	1	1
	17	6	2	1	1		8	5	2	1	1
	7	5	2	1	1		6	3	2	1	3
	6	5	2	1	1		7	7	3	2	2
	5	3	2	1	1		10	5	4	3	4
	17	6	2	2	2		29	7	4	3	4
	3	2	3	2	3		3	2	2	1	1
	6	5	8	2	2		18	7	2	1	1
	5	4	1	1	1		14	5	6	4	5
	6	4	2	1	1		15	5	1	1	1
	8	5	3	2	2		17	5	3	3	3
	3	3	5	3	3		10	5	2	1	3
	11	6	4	2	6		5	3	2	2	2
	16	6	2	2	2		10	5	4	3	2
	8	3	4	3	4		6	4	1	1	1

ON 080-737 TO FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

LOT NUMBER
FIRING NUMBER

DATE 4 June 53

PENETRATIONS OF SHELL 120mm, O-482A LOADED AT .90
Soviet
IN PANELS WITH RADIUS OF 30 FEET AND FEET

Sheet 8 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
5	3	2	1	1	1
16	13	3	2	4	
12	5	5	3	5	
9	5	2	2	3	
		2	1	1	
		2	1	2	
		2	2	2	
		3	2	2	
		4	3	4	
		1	1	1	
		2	2	4	
		1	1	1	
		5	3	5	
		3	3	4	
		2	1	1	
		4	3	3	
		1	1	1	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	1	
		4	3	5	
		3	1	2	
		1	1	1	
Total	66		87		
35	5	4	2	2	2
10	5	4	2	4	
13	7	1	1	2	
6	4	1	1	1	
18	5	1	1	1	
10	6	2	1	1	
3	2	2	2	1	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
8	3	1	1	1	1
7	4	4	4	4	4
5	3	2	1	1	1
9	6	5	4	5	
5	4	1	1	1	1
10	5	1	1	1	1
10	8	1	1	1	1
10	5	3	1	3	
7	4	4	3	4	
9	5	1	1	1	
13	9	1	1	1	
6	5	5	3	6	
12	6	3	2	2	
7	4	1	1	1	
5	4	1	1	1	
15	6	2	2	4	
4	3	3	2	3	
5	3	8	4	4	
8	7	2	1	2	
4	3	4	3	6	
4	3	1	1	1	
10	5	1	1	1	
10	3	2	1	1	
10	4	2	2	3	
6	4	4	2	2	
9	4	3	1	2	
9	4	4	3	4	
9	4	4	3	4	
7	5	2	1	1	
6	3	2	1	2	
8	4	3	2	2	
5	4	1	1	1	
6	6	1	1	1	
8	7	4	1	2	

ORDB-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING ROD NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet
IN PANELS WITH RADIUS OF 30'

TEST NUMBER 823444-2-92

EXPERIMENT Sheet 9 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			FEET
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
10	5	2	1	2		
9	5	1	1	1		
8	5	2	1	2		
7	5	3	2	2		
20	5	3	2	1		
6	5	4	2	3		
10	6	3	2	2		
11	5	3	1	1		
11	7	4	3	5		
5	4	2	2	2		
9	7	1	1	1		
15	9	1	1	1		
11	5	3	1	2		
	3	2	2			
	2	1	2			
	1	1	1			
	1	1	1			
	5	3	5			
	1	1	1			
	2	1	2			
	2	1	1			
	2	2	2			
	3	2	4			
	3	2	3			
	1	1	1			
	1	1	1			
	1	1	1			
	3	2	2			
	2	2	1			
	1	1	1			
	4	2	2			
	1	1	1			
	1	1	1			
	3	2	2			

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	
			3	1	1	
			6	3	2	
			3	3	6	
			3	1	2	
			3	2	1	
			4	2	1	
			4	3	6	
			3	1	2	
			1	1	1	
			4	3	3	
			1	1	1	
			2	2	3	
			2	2	2	
			2	1	1	
			8	2	5	
			6	4	6	
			3	2	4	
			1	1	1	
			3	3	5	
			2	1	4	
			2	2	3	
			2	2	2	
			3	2	2	
			5	4	5	
			2	1	1	
			2	2	3	
			3	2	2	
			4	3	3	
			4	2	2	
			1	1	1	
Total			54			105
	36	12	9	2	1	2
	8	6	1	1	1	

PENETRATIONS OF SHELLS IN PANELS

DATE 4 June 55

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet
IN PANELS WITH RADIUS OF 30 FEET

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 10 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
9	5	1	1	1	1
7	5	3	2	1	
9	5	1	1	1	
5	4	1	1	1	
5	4	2	2	8	
4	3	3	2	5	
8	4	2	1	1	
21	14	3	2	3	
7	5	4	3	4	
5	3	2	2	2	
11	4	1	1	1	
7	5	2	2	1	
6	3	2	1	3	
5	2	3	2	2	
23	7	1	1	2	
10	7	1	1	1	
4	2	2	1	2	
4	2	1	1	1	
14	11	3	2	5	
4	2	4	3	2	
4	2	4	3	4	
4	2	3	3	2	
7	4	2	1	1	
3	2	1	1	2	
12	7	1	1	1	
6	5	1	1	1	
5	3	2	1	1	
4	3	4	3	2	
6	3	3	2	3	
6	3	5	4	6	
9	6	3	2	2	
7	4	1	1	1	
13	5	3	2	2	
7	4	3	2	3	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	4	4	2	2	2
	9	5	2	1	2
	6	3	2	1	2
	5	2	1	1	1
	8	3	3	2	3
	7	4	3	2	5
			4	3	6
			3	2	6
			1	1	1
			3	2	4
			1	1	1
			1	1	1
			2	1	4
			4	3	4
			1	1	2
			3	3	6
			4	3	8
			1	1	2
			1	1	1
			1	1	1
			3	2	4
			1	1	1
			3	1	1
			2	1	2
			1	1	1
			2	1	1
			2	1	3
			3	2	4
			1	1	1
			1	1	1
			2	1	1
Total			42		66
37	9	4	3	2	2
	5	4	1	1	1

PENETRATIONS SHELLS IN PANELS					LOT NUMBER	DATE 4 June 58			
PENETRATIONS OF SHELL 122MM, 0-462A LOADED AT/90					FIRING RACK NUMBER				
IN PANELS WITH RADII OF 30° AND FEET					PRIORITY NUMBER				
Soviet					ROCKET NUMBER	EXPLANATION Sheet 11 of 34			
IN PANELS WITH RADII OF 30° AND FEET					ROCKET NUMBER	Round No. 17			
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH
7	5	3	2	1			3	2	1
10	6	1	1	1		Total	9		37
5	4	3	2	4		38	8	5	3
11	6	1	1	2			8	5	2
12	5	5	3	3			5	4	3
8	5	1	1	1			6	4	2
6	4	2	1	1			5	4	2
		2	1	4			12	9	3
		3	3	2				3	1
		3	2	1				2	1
		2	1	1				1	1
		1	1	1					1
		4	3	6				8	4
		4	4	5		Total	7		10
		2	2	1					
		2	1	1		39	6	4	2
		3	2	1			9	5	3
		1	1	1			10	3	6
		1	1	1				4	4
		2	2	1			9	5	4
		2	1	1				2	1
		2	1	1				7	5
		2	1	1				2	1
		4	3	4				4	3
		3	3	6				1	1
		2	2					4	3
		2	1					4	3
		3	1	1				4	2
		4	2	1				2	2
		2	2	2				3	2
		4	2	4				2	2
		7	4	8				2	1
		6	4	8				1	1
		2	1	2				4	3
		1	1	1				2	2

ORDNO-737 19 FEB 46
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm. a-4524 LOADED AT/90
IN PANELS WITH REACT DE 30' AND FEET

LOT NUMBER

DATE 4 June 55

FIRING NUMBER

PRIORITY NUMBER

XXXXXX Sheet 12 of 34

SYSTEM NUMBER Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS	PENETRATIONS			
	LENG H	WIDTH	LENGTH	WIDTH	DEPTH
			5	4	5
			5	4	4
			4	3	2
			1	1	1
			3	2	3
			3	2	6
			5	4	6
			1	1	1
Total		4		27	
40	5	4	4	1	1
	6	4	4	3	2
	6	5	1	1	1
11	5	1	1	1	1
	5	4	3	2	3
11	5	6	4	2	
		3	2	3	
		3	2	4	
		5	5	4	
		4	3	3	
		3	2	3	
		3	3	4	
	1	1	1		
	2	2	3		
	3	2	2		
	2	2	1		
	1	1	1		
	1	1	1		
3	3	3			
	2	1	1		
	2	1	1		
	3	2	6		
	2	1	2		
	4	3	7		

PANEL NUMBERS	PERFORATIONS	PENETRATIONS			
	LENGH	WIDTH	LENGTH	WIDTH	DEPTH
Total		6			24
41	4	3	3	2	3
	8	3	4	3	2
	5	4	2	1	1
	9	4	2	1	2
14	5	1	1	1	1
	6	4	3	2	2
	8	5	4	3	3
		3	2		4
		3	2		1
		5	3		3
		3	2		2
		2	2		3
		1	1		1
		4	2		4
		1	1		1
		1	1		1
		3	2		3
		2	1		2
		2	1		1
Total		7			19
42	8	4	5	3	2
	13	9	3	2	1
	7	4	1	1	1
		3	2		2
		3	2		1
		3	3		1
		3	2		2
		2	1		1
		3	2		1
		3	2		2
		2	1		1

ORDIG-237 19 FEB 48
FORMERLY SPOTZ-P-201

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122-mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30°

AND

FEET

PLOT NUMBER

FIRING POSITION NUMBER

PRIORITY NUMBER

DATE 4 June 48

XX000000 Sheet 13 of 34

XX000000 Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	1	2
Total	3				12
43	11	5	2	1	2
			1	1	1
			3	2	1
			2	1	1
			5	2	1
			1	1	1
			2	1	1
Total	1				7
44			1	1	1
			3	2	2
			3	2	3
			1	1	1
			2	2	2
			6	4	4
			4	2	1
			2	2	2
			5	3	3
			5	3	3
Total					10
45			4	2	2
			1	1	1
			2	2	2
			3	2	2
			2	2	1
			4	3	2
			4	3	2
			3	2	3
			1	1	1
Total	1	1	1		

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	1
			3	2	2
			2	1	1
			3	2	2
			1	1	1
Total					16
46			3	1	1
			1	1	1
			1	1	1
			2	1	1
			2	1	1
			2	2	1
Total					8
47	5	4	3	2	1
			2	1	1
			3	2	2
			3	2	2
			3	2	2
			1	1	1
			2	1	1
			4	2	4
			1	1	1
			4	3	4
			2	1	1
			6	4	5
			5	3	4
			6	4	4
Total		1			14

ORD-BG-737 18 FEB 48
FORMERLY SPOTX-F-291

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

FIRING ID NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30° AND FEET

xx-xxxxx Sheet 14 of 34

xx-xxxxx Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
48	3	2	2		
	3	1	1		
	3	2	1		
	2	2	1		
	8	2	4		
	4	4	2		
	3	2	3		
	2	1	1		
	1	1	1		
	1	1	1		
Total			10		
49	2	2	2		
	2	1	1		
	2	1	1		
	1	1	1		
	1	1	1		
	2	2	2		
	3	3	5		
	2	1	1		
	3	1	1		
	3	2	1		
	3	2	3		
	2	3	1		
	2	1	1		
	1	1	1		
	3	2	2		
	1	1	1		
	2	1	1		
Total			17		
50	5	3	2	1	1
	3	2	1	1	1
	9	7	2	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
	1	1	1	1	1
	1	1	1	1	1
	2	2	1	1	1
	2	1	1	1	1
	2	2	3	2	1
	2	2	1	1	1
	2	4	2	1	2
	1	1	1	1	2
	2	1	1	1	1
	4	4	5	1	2
	1	1	1	1	2
	3	1	1	1	1
	5	4	5	1	1
	5	3	2	1	2
Total		3			21
51	6	5	2	1	1
	.	.	2	1	1
	.	.	3	2	1
	2	1	1	1	1
	2	1	1	1	1
	1	1	1	1	1
	3	1	2		
	4	2	2		
	2	1	2		
	3	2	2		
	1	1	1		

PENETRATION OF SHELLS IN PANELS

DATE 4 June 53

PENETRATIONS OF SHELL 122-mm. 0-462A LOADED AT/90
Soviet IN PANELS WITH RADIUS OF 30' AND FEET

X000000000 Sheet 15 of 34

X000000000 Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	2				3	2	2
			4	2	2				3	2	2
			2	1	1				1	1	1
			4	4	3				3	1	1
Total	1				18				3	2	2
									1	1	1
52	3	3	3	3	4				3	3	3
			2	1	1				2	1	1
			1	1	1				4	2	6
			2	2	1				2	2	1
			1	1	1				2	1	2
			4	2	3				3	2	2
			4	2	2				1	1	1
			4	3	4				1	1	1
			3	1	3				2	1	1
			2	2	1						21
			1	1	1						
			5	3*	1				2	2	2
			1	1	1				2	2	3
			1	1	1				1	1	1
			3	2	3				1	1	1
			1	1	1				3	1	4
			3	2	1				1	1	2
			2	1	1				2	2	1
			1	1	1				1	1	1
			1	1	1				5	3	4
Total	1				20				2	2	2
									1	1	1
53	9	5	1	1	2				1	1	1
			1	1	1				2	1	1
			1	1	1				5	4	2
			2	2	1				7	4	6
			2	1	1				1	1	1
			2	2	2						16
Total											

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/20

Soviet IN PANELS WITH RADIUS OF 30° AND FEET

LOT NUMBER DATE 4 June 53

FIRING TEAM NUMBER

PRIORITY NUMBER

XXXXXX Sheet 16 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	WIDTH	DEPTH
55			4	2	4	56			4	3	3
			3	2	1				2	2	1
			4	2	2				1	1	1
			2	1	1				2	2	2
			1	1	1				2	2	2
			2	2	1				5	4	3
			1	1	1				2	1	1
			2	2	1				1	1	1
			2	2	2				4	2	2
			1	1	1				3	2	3
			4	2	4				3	2	4
			4	3	2				4	3	3
			3	1	1				2	1	1
			2	1	2				1	1	1
			2	1	1				3	1	1
			1	1	1				3	2	3
			4	3	4				2	2	2
			5	2	3				2	1	1
			1	1	1				4	2	2
			2	2	5				1	1	1
			1	1	1				4	1	1
			2	1	1				2	1	1
			4	2	2				3	1	1
			4	2	3				3	1	1
			2	2	1				3	1	1
			2	2	3				3	2	2
			2	1	2				2	2	1
			4	3	2				3	1	3
			3	2	2				1	1	1
			7	5	1				1	1	2
			3	2	3				3	2	3
			1	1	1				1	1	1
Total					32				3	2	1
									1	1	1

GROS-237 10 FEB 48
FORMERLY SPOTX-F-201B-11-126
PENETRATION OF SHELLS IN PANELS

DATE 4 June 53

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RATIO OF 30:1

AND

FEET

LOT NUMBER

FIRING ID NUMBER

PRIORITY NUMBER

XXXXXX Sheet 17 f 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	3
			2	3	7
Total					36
57	6	4	2	1	2
			1	1	1
			5	4	4
			4	2	2
			4	1	2
			8	3	6
			1	1	1
			1	1	1
			2	1	1
			5	4	5
			3	3	3
			2	1	1
			3	3	6
			3	1	1
			1	1	1
			3	2	3
			3	2	4
			5	2	5
			3	2	2
			1	1	1
			1	1	1
			1	1	1
Total	1				24
58.1		6	3	5	
		3	1	1	
Total		2	1	5	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.2	4	4	2	1	1
			1	1	1
			3	1	3
Total		1			4
58.3			1	1	1
			3	2	3
			1	1	1
			1	1	1
			3	2	1
			7	2	6
Total					7
58.4			2	2	2
			4	4	5
			1	1	1
			2	2	2
			6	2	6
			1	1	2
			1	1	2
Total					7
58.5	6	4	5	3	3
			3	2	4
			4	3	3
			1	1	1
Total	1				5
58.6			2	1	1
			1	1	1
			1	1	3

ORDG-737 19 FEB 48
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

SHOOTING NUMBER

PRIORITY NUMBER

X-11722 Sheet 18 of 34

Shell Number Round No. 17

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, 0452A LOADED AT/CO

Soviet IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total 58.6					3
59.1		2	1	1	
		3	2	2	
Total					2
59.2	13	5	5	4	4
		4	2	2	
		1	1	1	
		2	2	2	
Total	1				4
59.3	10	7	1	1	1
		4	3	4	
		2	2	2	
		5	4	6	
		2	2	2	
		2	1	1	
Total	1				6
59.4		7	4	6	
		4	2	2	
		3	1	1	
		2	1	2	
		4	2	4	
		5	4	4	
		4	3	2	
		1	1	1	
		2	2	2	
Total					9
59.5	12	5	2	1	1
		3	2	2	
		4	3	3	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
					3
					5
					1
					1
					6
Total	1				14
59.6					2
					5
					5
					5
					3
Total					6
60.1	14	6	4	3	3
	11	11	3	3	3
			1	1	1
			7	4	5
			1	1	1
			2	1	2
			2	1	1
			1	1	1
Total			2		8
60.2	8	4	1	1	1
					3
					1
					2

ARMED FORCES SCREEN PROVING GROUND NO. 446

ORDBG-737 10 FEB 48
FORMERLY SPOTI-P-291

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122-mm, O-462A LOADED AT/90
Soviet
IN PANELS WITH RADIUS OF 30° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			4	2	4
			3	2	3
			4	1	2
			1	1	1
			3	2	2
			3	2	7
Total	1				10
60.3	4	3	3	1	1
			1	1	2
			2	1	1
			2	2	3
			3	2	4
			2	1	1
			4	4	3
			2	1	1
Total	1				8
60.4	6	6	5	4	6
	6	5	1	1	1
			8	2	7
			3	2	1
			1	1	1
			7	2	4
			1	1	1
			1	1	2
			1	1	1
			3	2	4
			6	1	1
Total	2				11
60.5	5	3	5	5	4
			5	3	3

LOT NUMBER	DATE	4 June 53			
FIRING RECORD NUMBER					
PRIORITY NUMBER					
X-11822 Sheet 19 of 34					
SHELL NUMBER Round No. 17					
ROCKET NUMBER					
PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			5	4	4
			4	4	5
			4	3	2
			1	1	1
			3	2	2
Total	1				8
60.6	12	5	4	2	2
			2	1	1
			4	2	2
			1	1	2
			2	2	2
			1	1	1
			2	2	4
			5	3	4
			2	1	2
			2	1	3
			3	2	2
Total	1				11
61.1	5	4	1	1	1
			1	1	1
			9	6	5
			2	1	2
			5	4	2
			1	1	1
			1	1	1
			4	4	6
			3	1	1
Total	1				9
61.2	8	4	2	1	1
	14	7	1	1	1

ORDBG-737 18 FEB 48
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet

IN PANELS WITH RADIUS OF 30' AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			2	1	1
			5	4	3
			12	3	4
			1	1	1
			3	2	2
			4	2	1
			5	3	3
			2	1	2
			1	1	1
			3	1	1
			2	1	2
			1	1	1
			2	1	2
			2	2	2
Total	2				17
61.3	5	4	4	3	2
	14	4	1	1	1
	5	4	1	1	1
	9	4	1	1	1
	6	3	1	1	1
			3	2	4
			1	1	1
			4	3	2
			1	1	1
			1	1	1
			8	3	5
			1	1	1
			5	4	4
			4	3	3
			1	1	1
Total	5				16

LOT NUMBER 1 DATE 4 June 53
FIRING 1 SIGHT NUMBER
PRIORITY NUMBER
Sheet 20 of 34
Round No. 17
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
61.4	6	4	1	1	1
	4	4	2	1	1
	7	4	1	1	1
	8	4	4	2	2
			1	1	1
			4	2	2
			1	1	1
			5	3	7
			4	2	4
			1	1	1
			4	3	3
			6	4	3
			2	2	1
			2	2	2
			4	3	7
			1	1	1
			7	4	9
Total	4				17
61.5	8	5	2	2	3
	7	4	2	2	1
	11	4	3	2	1
			2	2	1
			2	1	1
			3	2	2
			5	3	7
			1	1	1
			4	2	3
			3	3	4
			3	2	4
			2	2	2
			5	3	6
			2	1	1
Total	1				1

ORDBQ-737 10 FEB 46
FORMERLY SPOTI-F-891

PENETRATIONS OF SHELLS IN PANELS

B-11232

DATE 4 June 55

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

30'

AND

FEET

LOT NUMBER

FIRING RECORD NUMBER

PRIORITY NUMBER

XXXXXX Sheet 21 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
			2	1	1		14	8	1	1	1
Total		3			16				1	1	1
									1	1	1
61.6	11	4	1	1	1				3	2	2
	7	5	4	3	2				3	2	2
			4	2	2				3	2	2
			5	3	4				6	4	4
			8	5	7				1	1	1
			4	2	2				3	2	5
			3	3	5				1	1	1
			5	3	4				3	2	1
Total		2			8				6	4	4
									3	1	1
62.1	9	5	1	1	1				1	1	1
	5	4	5	4	8						
			2	1	2						
			1	1	1						
			4	3	2						
			1	1	1						
			8	4	6						
			1	1	1						
			1	1	1						
			2	1	1						
			1	1	1						
			4	3	4						
			2	1	2						
			1	1	1						
			2	2	1						
			1	1	1						
Total		2			17						
62.2	6	4	3	2	1						
	6	5	4	3	2						

GROEG-747 18 FEB 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

LOT NO.

FIRING D NUMBER

DATE 4 June 61

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADII OF

30'

AND

FEET

XXXXXX Sheet 22 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
			2	2	2				3	2	4
			10	3	5				2	2	1
			1	1	2				3	3	1
			3	1	1				2	1	2
			4	2	2				3	3	2
			4	3	2				3	2	5
			5	3	3				1	1	1
			1	1	1				2	1	6
			3	2	1				1	1	1
Total		3			14				1	1	1
									6	4	6
62.5	7	6	4	3	3				14	4	5
	10	5	4	3	5				3	2	1
	4	2	2	1	1				2	1	1
			5	4	4				1	1	1
			3	2	2				Total	3	20
			1	1	1						
			5	3	4				63.1	1	1
			1	1	1					1	1
			3	2	1					3	2
			4	3	2					5	5
			8	3	3					3	2
			2	2	3					1	1
			2	1	1					4	3
			5	4	4					4	3
			2	1	2					5	2
			2	2	6					4	3
Total		3			16					2	2
										3	2
62.6	8	6	1	1	2					7	3
	11	6	1	1	1					3	3
	14	8	1	1	1				Total		14
			3	1	1						
			2	2	2						

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 4 June 53

PENETRATIONS OF SHELL 122mm. O-4S2A LOADED AT/90
Soviet
IN PANELS WITH RADIUS OF 30' AND FEETTEST NUMBER Sheet 23 of 34
Shot Number Round No. 17
ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.2	12	8	4	3	2				3	2	1
	6	3	4	2	3				5	3	3
	5	4	2	1	2				2	1	1
			4	3	4				2	1	1
			3	2	2				3	2	1
			3	1	1				1	1	1
			1	1	1				2	1	1
			4	3	4				4	3	4
			2	1	1				3	2	3
Total		3			9				5	2	4
						Total		3			14
63.3	4	3	7	3	4						
	10	4	2	1	1	63.5	4	3	2	2	2
	4	4	2	1	1		3	3	2	1	1
	5	4	2	1	1			3	2	2	
	5	3	5	4	4			7	4	5	
			1	1	1				2	1	1
			2	1	1				3	2	2
			2	1	2				6	5	4
			2	1	1				8	4	4
			2	1	1				1	1	1
			7	3	4				3	3	5
			4	3	2				2	1	1
			3	2	3				2	1	1
			6	3	3		Total	2			12
			5	4	4						
			3	1	1	63.6	8	6	4	4	6
			6	2	2			5	4	3	2
Total		5			17			6	5	3	6
									3	2	1
63.4	12	6	3	2	2				3	2	2
	7	5	3	1	2				3	3	3
	4	4	4	3	2				3	2	2
			3	1	2				2	2	2

ORBBG-737 19 FEB 49
FORMERLY BPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

LOT NUMBER
FIRING NUMBER

DATE 4 June 53

PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90
IN PANELS WITH RADIUS OF 30' AND FEET
Soviet

~~do not check~~ Round No. 17

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			6	3	3
			2	1	1
			6	3	5
			1	1	1
			3	2	3
			1	1	1
			4	2	3
			1	1	1
Total	3	4	2	3	7
TOTALS					
30' Radius	387				1404

ORD-5737 16 FEB 48
FORMERLY SPOTX-F 281

PENETRATION OF SHELLS IN PANELS

LOT NUM.
FIRING NUMBER

DATE 4 June 53

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 601 FEET

AND

FEET

Sheet 25 of 34

XXXXXX Found No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
10			4	2	2
Total					1
12			4	2	2
Total					1
15			5	3	4
Total					4
19			1	1	1
Total					1
21			2	2	2
Total					1
22			4	2	4
Total					1
23			5	4	5
			2	1	1
			4	2	4
			4	2	2
Total					4
24	5	4	1	1	1
			2	1	1
			3	2	8
Total					3
25			1	1	1
			1	1	1
			4	4	2
			3	2	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					5
26	6	4	2	1	1
			2	1	1
			4	3	2
			2	2	1
Total					4
27	5	4	1	1	1
			9	5	5
			8	7	3
			6	4	4
			1	1	2
			1	1	1
Total					6
28	4	4	4	3	4
			9	5	1
			6	4	1
			7	6	3
			5	5	4
			2	1	2
			3	2	4
			2	2	2
			6	4	3
Total					9
29	6	4	2	2	2
			6	4	1
			6	4	5
			6	5	4
			16	4	6
				1	1
					1

OBREG-727 18 FEB 48
FORMERLY SPOTZ-F-201

PENETRATION OF SHELLS IN PANELS

LOT NUMBER DATE 4 June 53

FIRING ID NUMBER

PRIORITY NUMBER

XXXXXX Sheet 26 of 34

XXXXXX Round No. 17

PENETRATIONS OF SHELL 122MM, O-462A LOADED AT/30

Soviet

IN PANELS WITH RADII OF

60'

AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			5	3	2
			4	2	2
			3	1	4
			3	2	2
			2	2	2
			3	2	4
			2	1	1
			4	3	6
			5	4	8
			3	1	1
			2	2	4
			3	2	2
			3	2	1
			5	4	4
			5	4	8
			2	1	1
			1	1	1
Total	6		*	24	
30	6	4	1	1	1
	7	4	2	1	1
	8	7	3	2	3
	6	5	1	1	1
	4	4	3	2	1
	7	6	1	1	1
	7	5	1	1	1
	10	5	3	3	2
	6	5	2	2	1
	7	5	1	1	1
		2	2	2	2
		2	2	1	1
		3	2	4	
		1	1	1	
Total	10			14	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31			2	2	2
			2	1	1
			2	2	3
			2	1	3
			2	2	1
			1	1	1
			1	1	1
			4	2	6
			3	2	2
			5	3	3
			3	3	2
			3	1	1
			3	1	1
			1	1	1
Total					14
32	8	6	1	1	1
	8	3	5	3	5
	7	4	1	1	1
	5	4	2	1	1
	6	3	1	1	1
			4	4	2
			1	1	1
			4	3	1
			2	3	3
			4	3	3
			8	4	6
			4	3	4
			1	1	1
			2	2	2
			3	2	6
Total		5			15
33	6	4	3	3	1

CROSS-737 18 FEB 48
FORMERLY SPOTZ-7-281

PENETRATIONS OF SHELLS IN PANELS

B-11822
DATE 4 June 53

PENETRATIONS OF SHELL 122mm, O-4524 LOADED AT/90
Soviet
IN PANELS WITH RADIUS OF 60° AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
8	6	4	2	2	2
8	4	1	1	1	1
11	6	1	1	1	1
7	4	6	4	8	
8	4	2	1	1	
7	5	2	2	2	
3	3	6	3	4	
18	6	5	3	8	
7	5	1	1	1	
10	5	4	3	3	
12	6	2	1	1	
8	5	3	2	2	
8	4				
Total		14		13	
34	7	5	3	2	2
	27	4	3	2	2
	20	5	5	3	2
	23	8	7	4	3
	4	3	0	3	5
	7	4	2	2	1
	11	5	4	5	2
	12	4	5	4	4
	7	6	2	1	1
	4	3	1	1	1
	20	8	1	1	1
	14	6	3	1	1
		3	2	2	
		4	3	3	
		5	4	4	
		2	2	3	
		2	1	2	
		3	1	1	
		3	1	2	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			3	2	1
			4	2	1
			4	2	4
			4	2	5
			3	2	2
			2	2	1
			1	1	1
			6	3	5
			3	1	1
Total		12			28
	35	6	5	6	5
		10	4	1	1
		6	4	7	4
		10	5	6	3
		16	5	3	2
		14	7	3	2
		27	7	3	2
		12	5	2	1
		10	8	1	1
		8	5	3	2
		11	6	4	3
		9	6	4	2
		7	4	5	2
		6	4	2	1
		14	14	4	3
		5	4	4	3
		9	4	3	5
		10	5	1	1
		6	3	2	1
		11	8	2	1
		9	5	2	1
		4	4	2	6
		4	3	1	2

P-11822

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER
FIRING ROD NUMBER
PRIORITY NUMBER
XEROX SHEET 28 of 34
SHEET NUMBER Round No. 17
ROCKET NUMBER

PENETRATIONS OF SHELL 122MM, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADII OF 60' AND FEET

PANEL NUMBERS	PERFORATIONS	PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH
	1	1	1	
	3	2	2	
	4	3	2	
	4	2	2	
	1	1	1	
	3	2	4	
	2	2	1	
	1	1	1	
	3	2	1	
	8	2	2	
	4	2	1	
	3	2	1	
	5	2	5	
	4	3	3	
	2	1	1	
	3	2	3	
	9	3	6	
	3	2	1	
	1	1	1	
	3	2	1	
	2	2	1	
	2	1	1	
	1	1	1	
	3	2	2	
	5	3	2	
	2	2	1	
	2	1	2	
	3	3	3	
Total	21		51	
36	19	9	4	3
13	9	3	2	1
4	3	2	2	1
12	7	5	4	2

PANEL NUMBERS	PERFORATIONS	PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH
	10	8	6	4
	4	4	1	1
	5	2	2	1
	6	5	4	3
	9	4	3	2
	7	5	3	2
	11	5	1	1
	7	5	3	2
	28	4	1	1
	5	4	4	2
	4	4	2	1
	1	1	1	
	2	2	1	
	3	2	1	
	4	3	6	
	2	1	1	
	8	4	5	
	1	1	1	
	2	1	1	
	2	1	1	
	3	3	1	
	2	1	1	
	1	1	1	
	4	3	1	
	2	1	1	
	2	2	2	
	1	1	1	
	4	3	2	
	2	2	1	
	2	1	1	
	3	4	6	
	5	3	2	
	1	1	1	

B-11722

PENETRATIONS SHELLS IN PANELS						LOT NUMBER	DATE 4 June 53	
PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90						FIRING POSITION NUMBER		
Soviet						PRIORITY NUMBER		
IN PANELS - RADII OF 60° AND FEET						ROCKET NUMBER		
PANEL PERFORATIONS PENETRATIONS								
PANEL NUMBERS	DEPTH	WIDTH	LENGTH	WIDTH	DEPTH	DEPTH	WIDTH	LENGTH
			4	3	6			
			2	1	3			
			3	2	2			
			3	2	3			
			3	2	2			
			3	2	1			
			5	2	4			
			4	2	2			
			2	1	1			
Total		15			47			
37	5	3	4	3	4			
	15	9	5	4	3			
	8	5	6	5	6			
			2	1	1			
			5	3	7			
			8	5	6			
			3	3	2			
			2	1	1			
			2	2	1			
			9	5	6			
Total		3			10			
38	12	5	10	8	5			
	3	4	5	4	2			
	3	6	2	1	1			
			2	2	1			
			5	3	2			
			5	3	6			
			3	3	3			
			4	3	1			
			4	4	2			
			5	3	2			
			3	2	2			
Total		2			2			13

ORDBG-737 19 FEB 48
FORMERLY SPOTX-F-281

PENETRATIONS OF SHELLS IN PANELS

DATE 4 June 58

PENETRATIONS OF SHELL 122mm. 0-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 60'

AND

FEET

LOT NUMBER

FIRING RECD. NUMBER

PRIORITY NUMBER

XXXXXX Sheet 30 of 34

XXXXXX Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
42	15	8	3	3	2	50			3	2	2
	10	5	3	3	2				3	2	2
		7	3	3	3	Total					2
		3	2	1		51		1	1	1	
Total		2			4	Total					1
						52	6	4	1	1	1
			1	1	1				1	1	1
		5	4	2					2	2	1
		1	1	1					2	2	1
Total					4				2	1	1
									1	1	1
			5	4	2	Total		1			6
		3	4	2		53		3	2	2	
Total					2				3	3	2
									1	1	1
		4	3	2					2	1	1
		1	1	1					4	3	2
		2	1	1					2	2	2
Total					3				1	1	1
									3	2	2
			6	4	3				2	2	1
		3	2	2					2	2	1
Total					2				2	2	1
						Total					9
			5	3	2	54		2	1	1	
Total					1				5	2	2
									3	1	1
		1	1	1					5	2	1
Total					1				2	1	1
									3	2	2
49		4	3	2					2	2	1
Total					1						7

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH	
50			3	2	2	
			3	2	2	
Total						
51			1	1	1	
Total						
52	6	4	1	1	1	
			1	1	1	
			2	2	1	
			2	2	1	
			2	1	1	
Total			1			
53			3	2	2	
			3	3	2	
			1	1	1	
			2	1	1	
			4	3	2	
			2	2	2	
			1	1	1	
			3	2	2	
Total						
54			2	1	1	
			5	2	2	
			3	1	1	
			5	2	1	
			2	1	1	
			3	2	2	
			2	2	1	
Total						

ORDNO-737 10 FEB 48
FORMERLY SPOTZ-P-281

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/90
Soviet IN PANELS WITH RADII OF 60' FEETLOT NO. 5
FIRING NUMBER

DATE 4 June 53

PRIORITY NUMBER

Sheet 31 of 34

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55		2	1	2	
		1	1	1	
		5	4	4	
		2	3	2	
		3	1	1	
		1	1	1	
		3	2	2	
		3	2	2	
		5	4	4	
		5	4	5	
		5	4	4	
		2	2	2	
Total					12
56		3	2	3	
		4	4	4	
		1	1	1	
		2	1	1	
		2	2	1	
		2	1	1	
		1	1	1	
		4	1	2	
Total					8
57		4	3	2	
		2	2	1	
Total					2
58.1		3	3	2	
		3	2	1	
		3	2	1	
Total					3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
58.2					
		3		2	1
				2	1
				2	1
Total					3
58.3					
		3		1	1
Total					1
59.1	13	6	5	3	2
	8	4	3	2	2
			3	2	2
			6	3	3
				1	1
Total		2			5
59.2	12	4	2	1	1
			3	2	2
			8	3	3
			3	2	1
			5	3	2
			2	2	1
Total		1			6
59.3	12	12	2	2	2
			6	4	3
			3	3	2
			3	2	3
			1	1	1
Total		1			5
60.1	4	4	2	1	1
	8	4	4	3	3
			4	4	3
			1	1	1

ORDBG-737 10 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NO. 13-11-2-2 DATE 4 June 53

FIRING READING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 22mm. 0-4621 LOADED AT/90

Soviet

IN PANELS WITH RADII OF 60°

AND

FEET

XXXXXX Round No. 17

XXXXXX Sheet 32 of 34

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	1
			1	1	1
			3	2	1
			3	2	3
			4	3	2
			5	3	2
			1	1	1
Total	2			11	
60.2			6	4	4
			3	2	2
			2	2	2
			12	6	6
			7	4	7
			3	2	1
			5	3	3
			3	2	1
			1	1	2
			4	4	4
			5	2	2
Total				11	
60.3			3	2	1
			10	3	3
			4	4	1
			1	1	1
			4	4	5
			6	3	3
			1	1	1
			3	2	1
			1	1	1
			1	1	1
			3	2	1
			6	4	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
Total					12
61.1	12	5	6	3	8
	11	6	3	2	1
	5	4	2	1	1
			3	2	2
			2	2	1
			7	4	4
			2	2	1
			3	2	2
			2	2	1
			3	2	4
			1	1	1
			3	2	1
			2	2	1
			3	2	5
Total	3				14
61.2	9	5	2	2	2
	5	5	3	2	1
	3	2	5	4	4
			1	1	1
			1	1	1
			4	2	2
			5	3	3
			7	4	3
			3	2	1
			1	1	1
			1	1	1
Total	3				11
61.3	8	5	4	4	3
			3	2	1
			3	1	1

ORDNO-737 28 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER D

DATE 4 JUNO 55

FIRING NUMBER

PRIORITY NUMBER

PENETRATIONS OF SHELL 122mm, 0-462A LOADED AT/90
Soviet

IN PANELS WITH RADII OF 60' AND FEET

Sheet 33 of 34

Round No. 17

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			4	3	3
			9	4	6
			4	3	2
			12	6	6
Total	1				7
62.1	5	7	4	2	2
			5	4	4
			3	2	2
			4	4	4
			3	2	2
			5	3	2
			4	4	6
Total	1				7
62.2	6	6	2	2	1
			1	1	1
			2	2	1
			2	2	1
			3	2	1
			5	3	2
			5	2	2
			3	2	2
			1	1	1
			2	2	2
			2	2	1
			2	1	1
			2	1	1
			4	2	1
			3	3	2
			6	4	3
Total	1				17

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3			3	3	1
			6	4	3
			8	5	7
			5	3	8
			2	1	1
			7	3	3
			4	2	3
			1	1	1
Total					8
63.1			3	2	2
			2	2	1
			4	3	1
			3	2	2
			6	4	5
			2	1	1
			2	2	2
			2	1	1
			4	4	4
			1	1	1
			4	1	1
			4	1	1
Total					12
63.2	6	4	3	2	1
	6	6	2	1	1
	5	4	5	4	4
			3	2	2
			10	3	8
			2	2	1
			1	1	1
			2	2	2
			6	2	1
			3	3	1

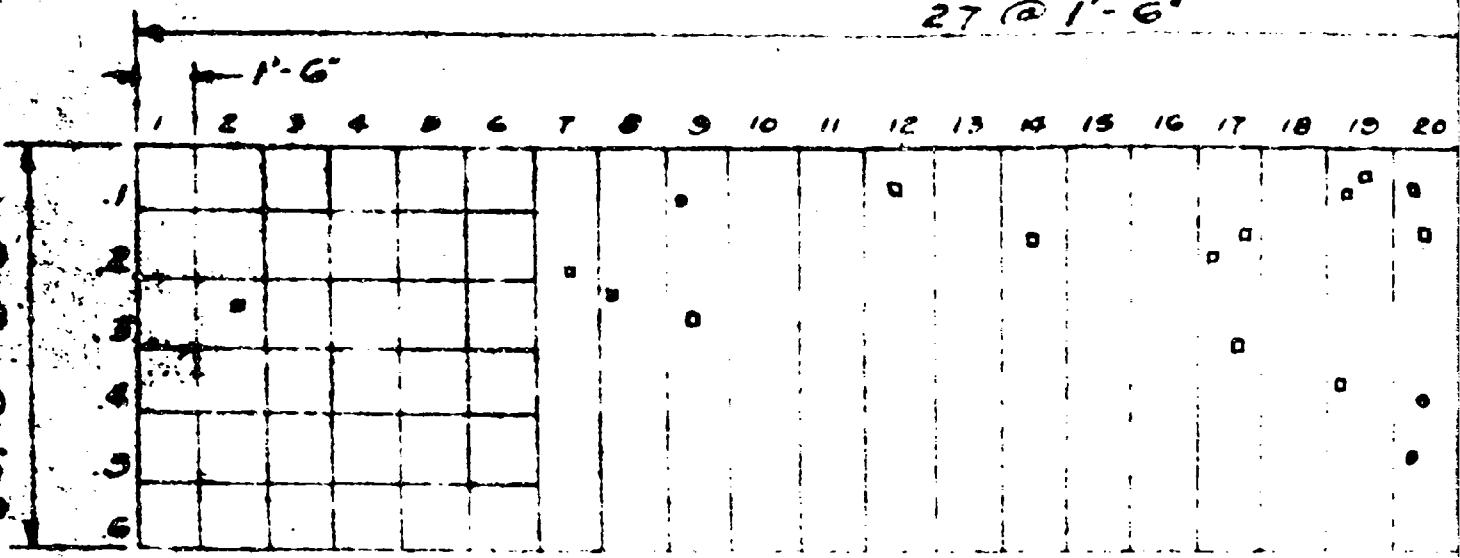
B-11822

CONFIDENTIAL

PANEL A

30 FT RADIUS 180° A

27 @ 1'-6"



35 @ 1'-6"



1 NO. 3 PINE BOARDS (DRESSED) PLACED VER

DATE: 6/4/53 RD. NO. 17

PERFORATIONS: 0- 387

SHELL: 120MM, SOVIET

PENETRATIONS: 0- 1404

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

7

180° ARC

15"

17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65
o-1 o-2 o-0
o-9 o-17 o-14
o-2 o-3 o-3
o-17 o-16 o-9
o-5 o-1 o-5
o-16 o-11 o-17
o-4 o-3 o-3
o-17 o-14 o-14
o-3 o-3 o-2
o-16 o-16 o-12
o-2 o-3 o-3
o-20 o-17

2

ED VERTICALLY

RANGE OBSERVATIONS SECTION

387

1404

CUT OF SHELLS
FOR

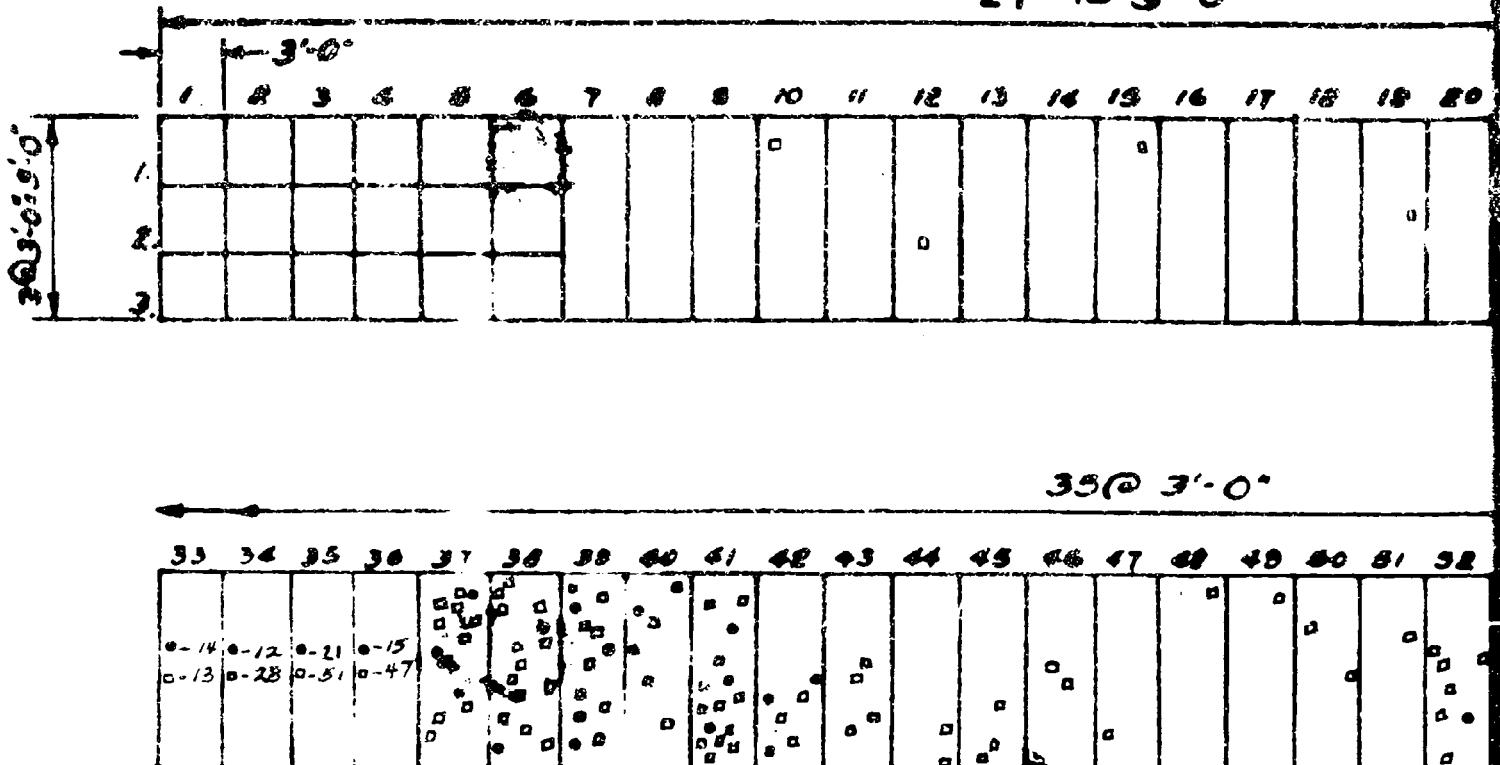
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT RADIALS)

148A

GREEN FELING GROUND NO.
OCT 27 1944 PPG 1876-15

AB-11822

CONFIDENTIAL **PANEL B**
60 FT. RADIUS 180° ARO
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED VER

DATE: JUNE 4 / 53 RD. NO. 17

PERFORATIONS: o- 130

SHELL: 122 MM, SOVIET

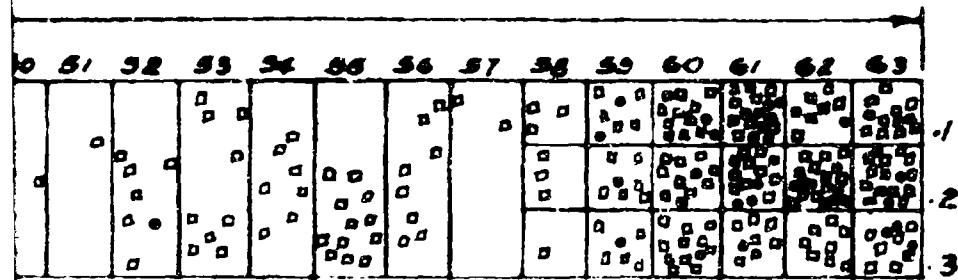
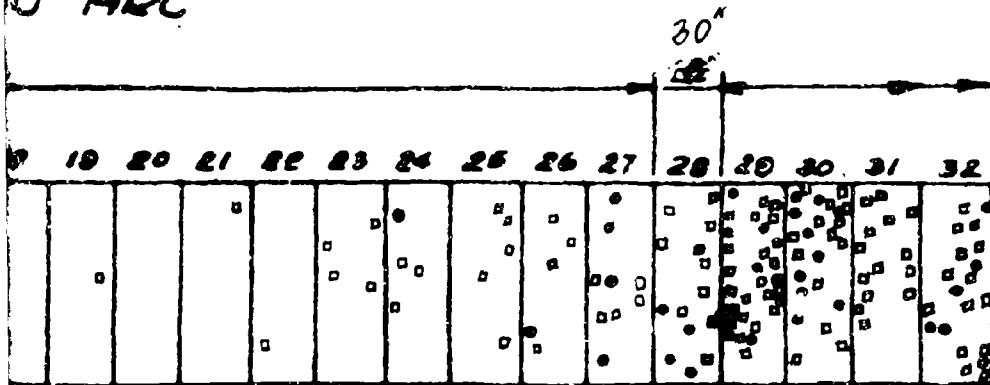
PENETRATIONS: o- 509

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

2

10° APC



RANGE OPERATIONS SECTION

130

509

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

14813

ABERDEEN PROVING GROUND
OCT. 27, 1944 APG 11816-74 PR

B-11822

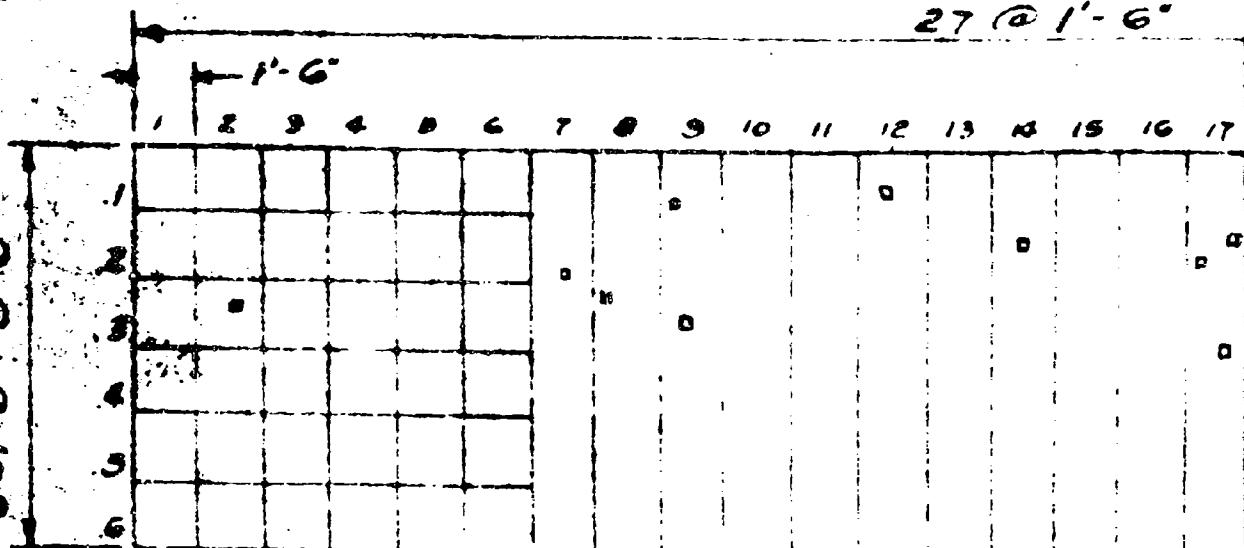
三

CONFIDENTIAL

PANEL A

30 FT RADIUS

27 @ 1'-6"



3512 1-6-



1 NO. 3 PINE BOARDS (PRESSED) PLACED

DATE: 6/4/53 RD. NO. 17

PERFORATIONS:

SHELL: 122MM, SOVIET

PENETRATIONS: 0-

POSITION OF SHELL: HORIZONTAL

CONFIDENTIAL

2

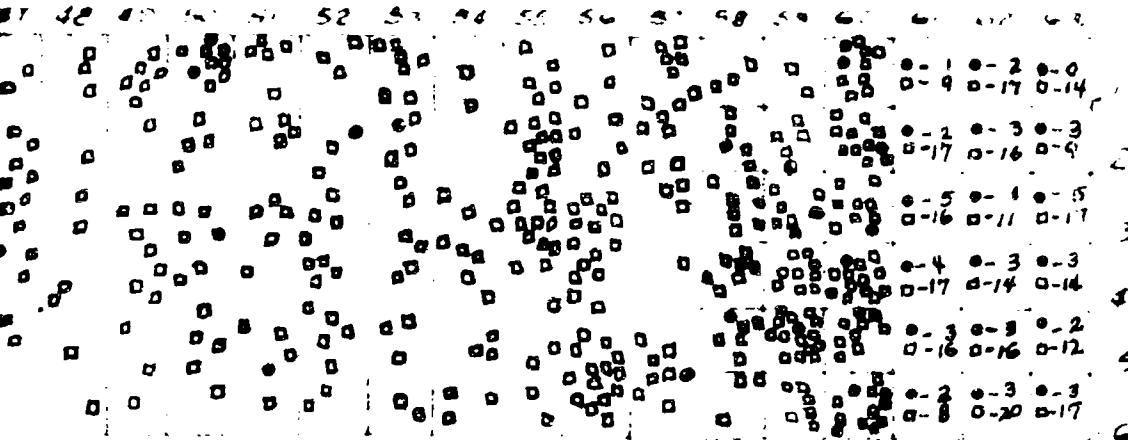
LA

DIUS 180° ARC

15"

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

15"



PLACED VERTICALLY

RANGE CORRECTIONS SECTION

DNS: 0. 387

CUT OFF POINTS

INS: 0. 1404

FOR

NUMBER AND DISTRIBUTION
OF FRAGMENTS (30 FT RADIALS)

ROCKFORD FALCON GROUND NO.

146P

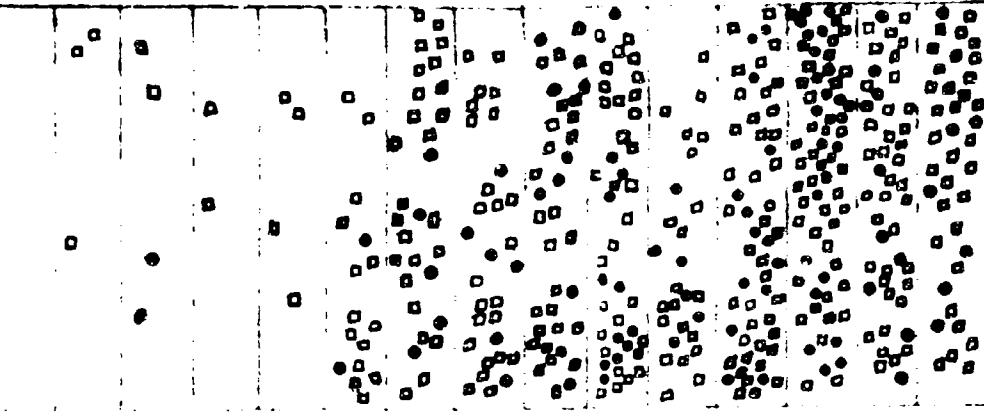
180° ARC

15"

EE

3

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

0-1 0-2 0-0

0-9 0-17 0-14

0-2 0-3 0-0

0-17 0-16 0-9

0-5 0-6 0-5

0-16 0-11 0-17

0-4 0-3 0-3

0-17 0-14 0-14

0-3 0-3 0-2

0-16 0-16 0-12

0-2 0-3 0-3

0-8 0-20 0-17

3

4

5

6

ED VERTICALLY.

DRAGUE CRESCENTS SECTION

387

LAYOUT OF DRAGUES

FCD

NUMBER AND DISTRIBUTION

OF FRAGMENTS
(30 FT RADIUS)

148 P

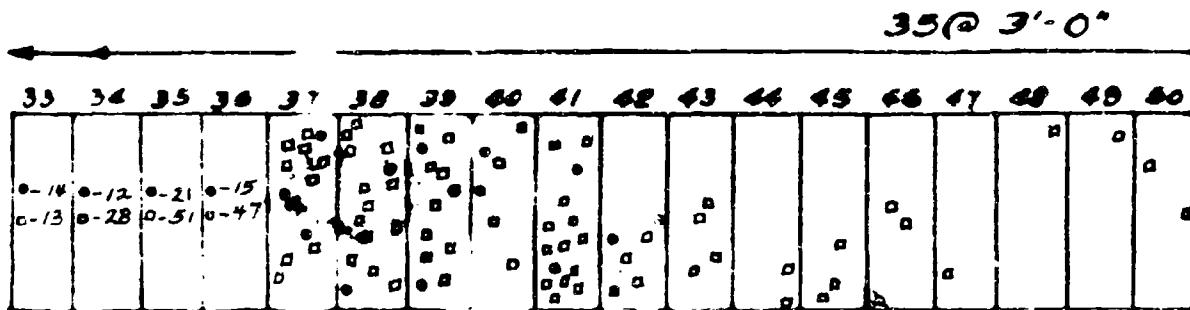
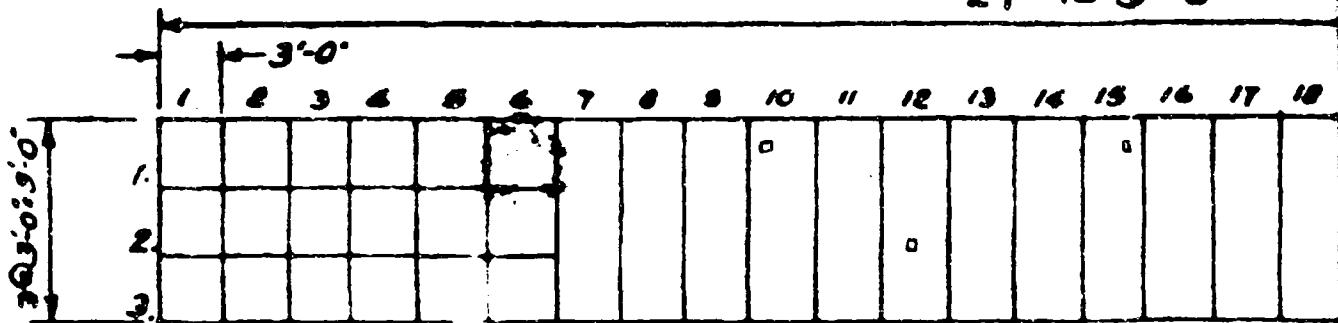
ROCKEEN FISHING GROUND NO.

OCT 27 1944

PPG 1876-15

3-11822

~~CONFIDENTIAL~~ **PANEL B**
60 FT. RADIUS 100
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: JUNE 4 / 53 RD. NO. 17

PERFORATIONS: 0

SHELL: 122MM, SOVIET

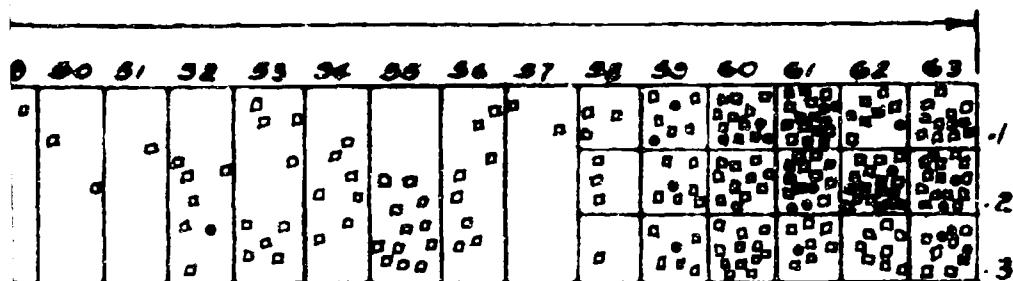
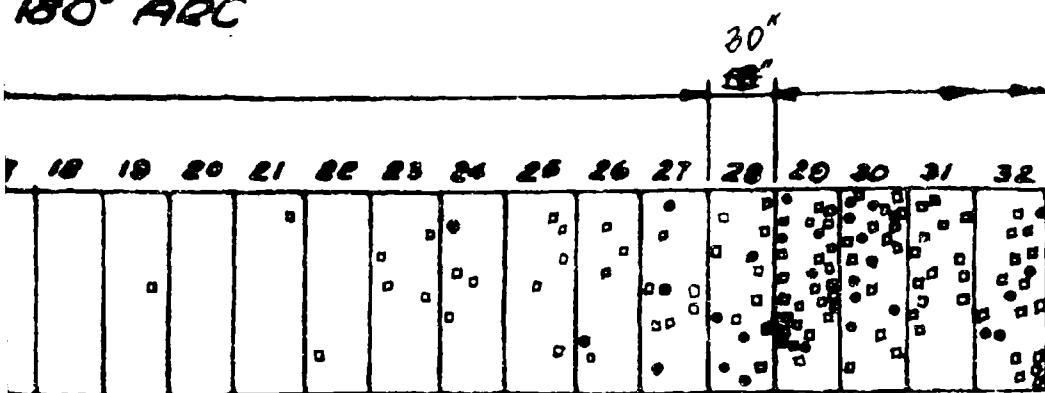
PENETRATIONS: 0

POSITION OF SHELL: HORIZONTAL

~~CONFIDENTIAL~~

180° ABC

2



CEO VERTICALLY.

RANGE OPERATIONS SECTION

D- 130

D- 509

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

14/81B

ABERDEEN PROVING GROUND, MD
OCT 27 1944 AOG 11876-14 PR

FIRING SECTEL NO. D-11922
ENCLOSURE 3

REPORT NO. 20

31 July 1963

SHELL: HE, 175 mm, Series
NUMBER: 8-410, Ammonium Nitrate 90% - TNT 10%

SHELL MAPPINGS

SPINNING

515
4-45
122

REVERSE

(none)

BASE

Machined Rough

Shell has one split rotating band.

Weight of Shell w/o Components = 46.12 lbs.
as Fired = 46.05 lbs.

Distance from Shell to the center of the C-320° aluminum flash buntjet = 22.57 ft.

Shell before firing is shown in AFM Photograph No. A76196.

Recovered fragments with their respective weights and velocities are shown in AFM Photograph No. A76197.

B-11832

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet, AT/90 Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 31 July 1953Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	18	2656	17	42	2604	33	N.R.	
2	4		18	3		34	N.R.	
3	3	2304	19	1		35	132	2042
4	12		20	4	2642	36	75	2567
5	5		21	N.R.	2567	37	5	2428
6	3		22	25		38	4	
7	35	2496	23	N.R.		39	N.R.	
8	26		24	6	2531	40	N.R.	
9	2		25	36	2496	41	N.R.	2567
10	17	2695	26	N.R.		42	N.R.	
11	2		27	46	2531	43	14	
12	N.R.		28	30(2)	2604	44	13	
13	N.R.		29	10	2462	45	1(2)	
14	3		30	4		46	N.R.	2604
15	5		31	4		47	110(2)	2604
16	7		32	11		48	1	

Average velocity 2373 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than $\pm \frac{3.5}{7}$ % for the highest velocity and $\pm \frac{2.8}{7}$ % for the lowest velocity.Shoot 20 of 20 COMPARISON 150

B-1172-2

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. RogersDate Fired 31 July 1953Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	N.R.		65	2		81	3	
50	50		66	14	2462	72	N.R.	2139
51	10		67	N.R.		83	19	1510
52	N.R.		68	N.R.		84	4	2428
53	7		69	2	2364	85	6	
54	69		70	13		86	5	
55	1		71	N.R.		87	6	2428
56	11	2531	72	163(3)	2567	88	8	
57	99(4)		73	N.R.		89	2	
58	2(3)		74	20		90	12	2551
59	11		75	19(2)	2504	91	N.R.	2567
60	3		76	10		92	8	2604
61	N.R.		77	N.R.		93	9	
62	N.R.	2396	78	1	2364	94	N.R.	
63	N.R.	2642	79	N.R.	2428	95	N.R.	
64	42(2)	2604	80	N.R.		96	5	

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.5 % for the highest velocity and \pm 2.8 % for the lowest velocity.Sheet 21 of 26

CONFIDENTIAL

13-11-52

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 31 July 1953Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
97	N.R.	1834	113	N.R.	2462	129	N.R.	2364
98	48(4)	2531	114	67		130	67(2)	2396
99	3		115	16		131	N.R.	
100	19	2019	116	N.R.	2496	132	24	
101	14		117	8	2534	133	158	
102	19		118	N.R.		134	15	
103	N.R.		119	37(3)	2496	135	5	2428
104	9		120	67(5)		136	42(9)	
105	N.R.		121	2	2496	137	19(4)	
106	N.R.		122	1		138	58	
107	12		123	N.R.	2462	139	29	
108	N.R.		124	95		140	8	
109	78(4)	1932	125	27(5)	2139	141	3	1975
110	6(3)	1695	126	N.R.		142	N.R.	
111	12(7)		127	11		143	16	2531
112	14		128	1		144	46(2)	2066

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than + 3.5 % for the highest velocity
and + 2.8 % for the lowest velocity. 3 7Sheet 25 of 26

B-11832

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, SovietSide Recovery Box DataProof Director Mr. C. L. RogersDate Fired 31 July 1953Distance from detonation point to target 22.71 feet. I end No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
145	9		161	3		177	12	
146	9		162	200(2)	1695	178	7(4)	
147	N.R.		163	20	2564	179	1	
148	99(3)		164	271		180	3	
149	3		165	N.R.	2218	181	N.R.	
150	40		166	14		182	N.R.	
151	19	2304	167	11(2)		183	N.R.	
152	1		168	3		184	3(5)	
153	106(3)		169	N.R.		185	21	
154	2		170	N.R.		186	6	
155	0+		171	79		187	N.R.	
156	12		172	98(7)		188	51	
157	15		173	8		189	141	
158	2		174	81(2)		190	4	
159	110(5)	2396	175	26		191	34	
160	N.R.		176	59		192	45	

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.5 % for the highest velocity and \pm 2.8 % for the lowest velocity. 4 7Sheet 25 of 26

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CONFIDENTIAL

B-11822

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet Side Recovery Box DataProof Director Mr. O. L. Rogers Date Fired 31 July 1953Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
193	12		209	N.R.	2156	225	17	
194	N.R.		210	N.R.		226	15	
195	7		211	N.R.		227	22	
196	7		212	6		228	16	
197	N.R.		213	N.R.		229	7(7)	
198	40		214	N.R.		230	27	
199	N.P.		215	20	2156	231	N.R.	
200	137		216	17		232	32	
201	51		217	N.R.		233	3	
202	23(4)		218	46(2)		234	8	
203	50		219	27		235	39	
204	48		220	N.R.		236	37	
205	N.R.	2510	221	15		237	N.R.	
206	N.R.		222	N.R.		238	12(2)	
207	N.R.		223	20(2)		239	5	
208	1	2083	224	4		240	N.R.	

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

NV - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than \pm 3.5 % for the highest velocity and \pm 2.8 % for the lowest velocity.Sheet 24 of 26

CONFIDENTIAL

FRAGMENT VELOCITY DATA

13-11822

Test of Shell, HE, 122-mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 31 July 1953

Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
241	63(2)		257	N.R.		273	2(3)	2496
242	75(2)		258	12		274	1	
243	8		259	14		275	15	
244	5		260	61(2)		276	21(2)	
245	24		261	N.R.		277	8	2674
246	53		262	31		278	74	2567
247	N.R.		263	2	2531	279	44	
248	146(4)		264	N.R.		280	0+	
249	37(7)		265	43		281	22(2)	
250	37(5)		266	7		282	18	
251	14		267	N.R.		283	10	2604
252	47(2)		268	3		284	N.R.	2567
253	23		269	N.R.	2246	285	N.R.	2604
254	94		270	0+		286	17	2462
255	12		271	3		287	N.R.	
256	22	1997	272	2	1912	288	0+	

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.5 % for the highest velocity and \pm 2.8 % for the lowest velocity. 6 7

Sheet 25 of 25

CONFIDENTIAL

155

B-1182-2

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. RogersDate Fired 31 July 1953Distance from detonation point to target 22.71 feet. Round No. 20

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
289	4(2)		305	N.R.				
290	4		306	N.R.				
291	3		307	2				
292	13		308	3	2208			
293	8		309	2				
294	N.R.		310	3				
295	N.R.		311	N.R.	2208			
296	11	2396						
297	2							
298	N.R.							
299	36	2656						
300	11							
301	23							
302	12	2510						
303	3	2131						
304	N.R.	2262						

Average velocity 2376 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracy less than $\pm \frac{3.5}{7} \%$ for the highest velocity
and $\pm \frac{2.8}{7} \%$ for the lowest velocity.Sheet 2

153

B-11.822

PENETRATION OF SHELLS IN PANELS					LOT NUMBER	DATE 01 JULY 53					
PENETRATIONS OF SHELL 120mm-6-462A Soviet dated 12/50					FIRING SIGHT NUMBER						
IN PANELS WITH RADIUS OF 30° AND FEET					PRIORITY NUMBER						
					100XHVS2 Sheet 1 of 46						
					100XHVS2 Round No. 20						
					ROCKET NUMBER						
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
2.3			1	1	1	Total					1
			1	1	1						
Total					2						
3.5			1	1	1	18	8	4	3	1	1
Total									1	1	2
									1	1	1
									2	2	2
									3	2	4
5.2			2	2	2	Total		1			5
Total											
6.4			1	1	1	19			1	1	1
Total									1	1	1
									1	1	1
7			3	1	1				2	1	2
Total						Total					5
8			2	1	1	20	10	10	2	1	2
Total									2	1	3
									1	1	3
						Total		1			3
10			2	2	1						
Total						21			3	2	3
						Total					1
11	3	2	2	1	1				.1	1	1
Total	1								1	1	1
									2	1	1
15			1	1	1				1	1	1
			1	1	1				2	1	1
Total					2				1	1	1
									2	1	4
16			3	1	6	Total					5
Total											
17		2	1	1		23			2	2	2
									1	1	2

CONFIDENTIAL

ARMED FORCES ABERDEEN PROVING GROUND NO 415

CDRAG-737 19 FEB 45
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 JULY 58

FIRING P NO. 10 NUMBER

PRIORITY NUMBER

PERFORATIONS OF SHELL 122mm. Q-462A LOADED AT/90

Sheet 2 of 46

~~WYTHE COUNTY~~ Round No. 20

Soviet
IN PAPERS WITH RADAR OF 30° AND

FEET | ROCKET NUMBER

PERFORMANCE

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
23 Cont			1	1	1
			2	1	2
			2	1	2
			1	1	1
			2	1	2
			1	1	1
			3	2	3
Total					10
24			1	1	1
			4	3	2
			2	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	1
			1	1	2
			1	1	1
			2	1	2
			2	1	3
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			1	1	2
			1	1	1
			2	1	2
			2	1	1
			1	1	1
			2	1	2
Total					23

PANEL NUMBERS	PROPORTIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25	8	7	1	1	1
	15	6	1	1	2
	4	2	1	1	2
	3	2	3	2	3
	4	3	2	1	1
			1	1	1
			5	2	4
			2	1	2
			4	3	4
			2	1	1
			2	1	2
			4	3	6
			6	4	3
			4	2	4
			3	2	4
			2	1	2
			1	1	1
			5	3	4
			2	1	2
			5	3	4
			3	2	7
			5	2	6
			3	1	1
			1	1	2
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			3	2	5
			1	1	1
			3	2	3

B-118221

100

GRCBQ-737 10 MLE 48
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122MM, Q-432A LOADED AT/90
Soviet IN PANELS WITH RADIUS OF 301 FEET AND

LOT NUMBER	DATE 31 JULY 52
FIRING POSITION NUMBER	
PRIORITY NUMBER	
PERIODIC TEST Sheet 3 of 46	
TEST NUMBER Round No. 20	
ROCKET NUMBER	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
25 Cont.			1	1	1
			3	2	4
			2	2	5
			2	1	1
			1	1	2
			2	2	5
Total	5		40		
26	4	3	1	1	1
	4	3	1	1	1
	2	2	2	1	2
	9	6	1	1	1
	5	3	3	2	7
	3	2	3	2	2
	3	2	1	1	2
	5	4	2	2	4
	7	4	1	1	1
	3	2	1	1	1
	3	3	1	1	2
			1	1	1
			1	1	1
			2	1	4
			2	1	2
			3	2	7
			1	1	1
			2	1	3
			2	2	3
			2	1	2
			1	1	1
			5	2	5
			1	1	1
			4	3	7
			1	1	1
Total	3	1	14	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			6	3	3
			1	1	1
			1	1	2
			6	3	2
			2	1	1
			1	1	2
			4	2	5
			3	2	3
			3	2	5
			2	1	2
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			4	2	4
			2	1	1
			1	1	1
			2	2	2
			3	2	4
			3	2	3
Total	11		48		
27	4	3	4	3	4
	18	9	2	2	2
	4	3	1	1	1
	3	4	1	1	1
	9	4	3	2	2
	4	2	2	2	2
	4	4	2	2	2
	5	4	2	2	3
	4	2	4	3	15/16
	5	3	3	2	3

CONFIDENTIAL

ORDNANCE TEST 19 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS SHELLS IN PANELS

B-10022

DATE 51 JULY 48

PENETRATIONS OF SHELL 122mm Q-432A LOADED AT/90
Soviet
IN PANELS WITH RADIUS OF 301 FEET AND

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

WEEK NUMBER Sheet 4 of 46

EXPERIMENTAL Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
27 Cont	4	3	2	1	2
	9	4	1	1	1
			3	2	7
			3	3	2
			2	2	2
			4	2	1
			2	1	3
			2	2	4
			1	1	1
			3	2	3
			3	2	5
			1	1	1
			2	2	2
			3	2	5
			3	2	1
			1	1	2
			1	1	3
			1	1	1
			3	2	4
			1	1	1
			9	3	2
			1	1	2
			4	2	4
			6	2	6
			2	2	3
			2	2	2
			4	2	4
			3	3	2
			1	1	2
			1	1	1
			3	2	4
			3	1	2
			4	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			1	1	2
			1	3	2
Total			12		46
			23	3	3
			10	4	2
			4	4	1
			4	2	1
			8	5	2
			5	2	4
			5	3	2
			6	3	1
			2	2	7
			2	2	2
			2	2	2
			2	2	2
			2	1	3
			1	1	1
			1	1	1
			3	3	4
			2	2	7
			2	2	4
			3	2	4
			1	1	1
Total			6		21
			23	5	1
			5	3	1
			5	3	1
			4	4	1
			8	4	1
			4	4	1
			175	42	2

R-11822

ORDNANCE TEST 19 FEB 48 FORMERLY SPOTZ-F-281 PENETRATION OF SHELLS IN PANELS					LOT NUMBER	DATE 31 July 53			
PENETRATION OF SHELLS IN PANELS 122 mm, Q-432A Soviet 17/90					FIRING ROD NUMBER				
IN PANELS WITH RADIUS OF 50'					PRIORITY NUMBER				
AND FEET					ROCKET NUMBER				
PENETRATIONS					PENETRATIONS				
PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH	PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH
	3	2	4	2	4		3	2	2
	5	5	1	1	1		1	1	1
	4	2	2	2	3		3	3	6
	4	3	1	1	1		3	3	8
	5	5	2	2	2		2	2	5
	8	4	1	1	2		3	2	6
	4	3	1	1	3	Total	14		47
		3	3	2					
		2	2	3		30	6	3	2
		1	1	2			7	5	2
		1	1	1			5	4	4
		3	2	4			7	4	2
		1	1	2			3	3	4
		1	1	1			2	4	2
		1	1	1			3	3	1
		4	4	5			4	3	1
		1	1	1			5	4	3
		4	2	3			6	4	2
		1	1	1			5	4	3
		9	6	3			5	2	1
		1	1	1			3	3	1
		3	2	3			7	5	2
		2	1	1			6	4	3
		2	2	2			6	4	2
		4	3	5			4	3	1
		2	1	1			7	6	1
		2	2	4			4	4	2
		1	1	1			3	2	2
		2	2	2			4	4	1
		4	2	3			12	3	1
		4	3	6			3	3	1
		1	1	1			4	2	1
		2	1	1			3	3	4
		3	4				5	3	3
							10	4	3
								3	6

~~CONFIDENTIAL~~
~~CONFIDENTIAL~~

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A Sovideco AT/30

IN PANELS WITH RADIUS OF 30 FEET

AND

FEET

LOT NUMBER

FIRING ROLL NUMBER

PRIORITY NUMBER

DATE 31 July 48

PEN-NUMEROV Sheet 6 of 46

TEST NUMBER Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30 Cont	4	3	4	2	1
	5	3	3	1	1
	4	3	8	4	3
	4	3	1	1	1
	6	4	2	2	2
	8	4	2	2	2
	8	5	2	2	3
	7	5	3	2	2
	4	3	4	2	2
	8	7	1	1	1
	7	4	1	1	1
	8	6	1	1	1
		1	1	1	
		4	2	3	
		4	2	9	
		1	1	1	
		3	2	1	
		2	2	2	
		2	2	2	
		3	1	1	
		3	3	3	
		2	2	2	
		4	3	2	
		4	2	3	
		2	2	2	
		1	1	1	
		2	2	2	
		2	2	2	
		3	3	8	
		3	3	2	
		3	2	1	
		3	3	5	
		1	1	1	
		1	1	1	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
30 Cont			6	2	7
			2	2	2
			3	2	1
			2	2	2
			1	1	1
			1	1	1
			3	2	1
Total		38			67
31	6	4	4	3	7
	4	3	1	1	1
	7	4	1	1	1
	6	5	2	2	2
	5	4	1	1	1
	7	5	1	1	1
	5	7	3	2	5
	5	3	1	1	1
		2	2	2	
		6	4	1	
		1	1	1	
		1	1	1	
		3	2	4	
		3	2	1	
		6	4	3	
		2	2	2	
		4	2	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		4	2	6	
		2	2	2	

CONFIDENTIAL

Form 707-10 PER 48
PROGRESS REPORT-F-201

PENETRATIONS OF SHELLS IN PANELS

B-11824
DATE 31 July 54

LOT NUMBER

FIRING POSITION NUMBER

PRIORITY NUMBER

JOHNSON Sheet 7 of 48

KELLOGG Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, G-482A SOLOMONS 11/50

IN PANELS WITH RADIUS OF 30°

FEET

Panel Number	PERFORATIONS		PENETRATIONS		
	Length	Width	Length	Width	Depth
11 Cont			1	1	1
			2	1	3
			1	1	1
Total	8			28	
12	6	4	3	2	1
	7	5	3	1	1
	9	5	4	2	1
	3	3	1	1	1
	5	4	3	2	1
	9	2	5	3	7
	6	4	2	2	2
	7	4	4	3	9
	8	3	5	4	7
	5	4	5	4	3
11	9	1	1	1	1
		1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	3	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	4	3	2		
	6	3	5		
	1	1	1		
	3	3	2		
	3	2	4		
	4	2	5		
	3	2	3		
	1	1	1		
	1	1	1		
	3	2	2		
	1	1	1		
	3	2	2		
	1	1	1		

Panel Number	PERFORATIONS		PENETRATIONS		
	Length	Width	Length	Width	Depth
Total	11				29
	33	4	3	4	4
	6	3	3	2	4
	4	2	4	3	7
	7	3	4	3	5
	7	4	1	1	1
	8	7	4	3	6
	7	3	5	2	5
	8	3	2	1	1
	4	3	1	1	1
	11	5	2	2	2
	5	4	3	2	1
	7	4	3	1	1
	15	12	1	1	1
	3	7	3	2	1
	8	4	3	2	1
	7	3	2	2	3
	6	3	1	1	1
	12	5	1	1	1
	5	4	1	1	1
	10	7	1	1	1
	4	3	4	2	1
	4	3	4	3	2
	2	2	6	2	2
	7	4	3	3	4
	7	4	2	2	2
	7	5	1	1	1
	8	4	2	2	7
	6	5	5	3	5
	14	5	2	2	3
	1	1	1	1	1
	3	2	2		1257
	1	1	1	1	1
	4	3	2		2

GDRG 737 IP FEB 48
FORMERLY SPOTL-P-261

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, C-182A LOADED AT/BO
Soviet
IN PANELS WITH RADII OF 5.11 AND FEET

LOT NUMBER
FIRING POSITION NUMBER
PRIORITY NUMBER
TEST NUMBER Sheet 3 of 46
TEST NUMBER Found No. 20

PANEL NUMBERS	PERFORATIONS	PENETRATIONS			PANEL NUMBERS	PERFORATIONS	PENETRATIONS			
	LENGTH	WIDTH	DEPTH			LENGTH	WIDTH	DEPTH		
33 Con		3	2	1	34 Con	18	4	3	2	4
		2	2	2		2	3	1	1	2
		2	2	2		3	3	1	1	3
		2	2	2		16	6	2	2	2
		1	1	1		3	4	1	1	1
		4	2	3		16	5	1	1	1
		3	1	5		3	3	5	4	4
		2	2	2		6	3	1	1	1
		1	1	1		6	4	1	1	1
		4	4	5		7	5	2	1	2
		2	2	5		7	4	3	2	1
		2	2	2		9	4	1	1	2
		3	1	1		5	4	3	3	1
		1	1	1		20	11	1	1	2
		5	3	3		9	7	4	3	3
		1	1	1		16	6	4	3	4
		1	1	1		6	3	1	1	1
		5	2	7		9	4	1	1	2
		3	2	5		7	4	2	2	2
		2	2	2		3	3	2	1	4
		2	2	2		3	6	3	3	2
		2	2	2		5	3	1	1	1
		2	1	1		5	3	1	1	1
		3	2	1		6	4	1	1	1
29				55		10	4	1	1	1
34	4	4	1	1		5	5	1	1	1
30	7	3	3	5		10	3	3	2	7
7	4	2	1	1		13	3	5	5	4
10	7	1	1	1		11	6	3	2	5
6	5	2	2	2		7	4	1	1	1
4	4	1	1	1		9	5	2	2	4
3	3	2	1	2		6	4	2	1	1
7	2	2	2	3		3	3	3	2	4
						11	8	4	3	5

B-11-22

PENETRATIONS OF SHELLS IN PANELS					LOT NUMBER	DATE 31 July 6			
PENETRATIONS OF SHELL 120-mm. G-462A LOADED AT/30					FIRING R. NO. NUMBER				
SO. jet IN PANELS WITH PEGS OF 301 AND FLET					PRIORITY NUMBER				
					TEST NUMBER				
					ROCKET NUMBER				
PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH
34 Cont.	10	3	3	2	6	34 Cont.	3	3	10
	6	4	1	1	2		3	2	6
	5	4	3	2	5		1	1	1
	7	4	1	1	1		3	3	5
	7	2	1	1	1		3	1	2
	5	4	1	1	1		1	1	1
	7	4	1	1	2		2	2	2
	5	6	1	1	2		2	1	2
	14	3	3	2	5		2	2	5
	6	4	1	1	1		3	3	5
	4	3	3	1	3		4	3	5
	9	5	3	1	1		4	3	3
	7	4	1	1	1		2	2	4
	3	4	5	3	5		1	1	1
	5	4	2	2	3		2	1	1
	3	4	2	1	1		1	1	1
	11	2	3	1	1		1	1	1
	4	3	1	1	2		2	2	3
	3	3	3	2	4		3	2	4
	2	5	1	1	1		1	1	1
	3	5	1	2	2		2	1	1
		1	1	1	1		3	2	2
		1	1	1	1		1	1	1
		2	1	1	1		2	2	3
		1	1	1	1				
		1	1	1	1	Total	63		100
		2	1	1	1				
		2	2	1	2	55	18	3	1
		1	1	1	1		6	4	2
		1	1	1	1		4	4	2
		2	1	1	1		12	6	1
		3	2	10			5	4	1
		2	1	1	1		17	7	2
		1	1	2			11	6	2
		1	1	1	1			3	3
		1	1	1	1				0

ARMY TEST LABORATORY

ARMY TEST LABORATORY

PENETRATIONS SHELLS IN PANELS

PENETRATION OF PANELS BY SHELLS TESTED 10/1/44

SHELLS TESTED 10/1/44

IN PANELS WITH PACIFIC TYPE

AND FEET

FEET

TESTED 10/1/44

TESTED 10/1/44

TESTED 10/1/44

TESTED 10/1/44

PANEL NUMBERS	PENETRATIONS				
	PERCENTAGE	DEPTH	LENGTH	WIDTH	DEPTH
35 Cont	3	3	3	2	4
	4	3	1	1	1
	7	4	2	1	1
	10	3	2	1	1
	14	7	3	2	2
	11	3	5	3	2
	12	11	1	1	1
	18	6	6	3	3
	14	5	3	2	4
	3	2	4	3	2
	14	6	1	1	1
	6	4	2	1	5
	13	2	2	1	1
	10	3	2	1	1
	17	5	3	4	7
	3	3	2	1	1
	11	3	1	1	1
	11	7	1	1	2
	14	6	1	1	1
	4	4	2	1	2
	7	4	1	1	2
	3	5	3	2	2
15	6	1	1	1	1
	7	4	1	1	1
	4	3	1	1	1
	4	2	5	3	3
	3	4	1	1	1
10	5	3	2	3	
	7	4	1	1	1
	9	6	1	1	1
	13	7	2	1	2
	12	4	5	3	8
4	4	7	2	2	

PANEL NUMBERS	PENETRATIONS				
	PERCENTAGE	DEPTH	LENGTH	WIDTH	DEPTH
35 C	3	3	2	2	3
	6	7	4	2	4
	8	5	3	2	3
	14	7	1	1	1
	10	10	2	2	2
	6	6	1	1	1
	15	6	1	1	2
	13	4	1	1	2
	6	4	1	1	1
	9	7	1	1	1
	10	6	3	3	4
	6	4	1	1	1
	8	4	2	1	2
	6	4	2	2	2
	4	3	1	1	1
	11	4	1	1	1
	18	9	6	3	6
	21	5	1	1	1
	11	5	4	2	5
	8	5	4	3	8
	4	3	2	2	3
	7	4	4	3	4
			1	1	2
			1	1	1
			2	2	2
			1	1	1
			3	2	3
			2	1	1
			3	3	9
			9	3	3
			3	2	6
			2	1	1
			1	1	2



ARMY OF ABERDEEN PROVING GROUND NO 412

droplets 75° + 7.3 ±
percentage error 8.4%

PENETRATION. SHELLS IN PAGES

Soviet

IN PAGES WITH 94.01% 301 AND

5

2024 RELEASE UNDER E.O. 14176

1940-1941 - Record No. 20

DOVER LIBRARY - B

PANEL NUMBERS	POSITIONS		TIME PER POSITION	
	LENGTH	4' 0"	LENGTH	4' 0"
35 Cont.			2	1
			5	4
			3	3
			4	2
			4	2
			3	2
			1	1
			1	1
			4	3
			3	2
			2	2
			1	1
			2	2
			2	1
			2	1
			4	3
			2	1
			1	1
			2	1
			2	1
			1	1
			2	1
			3	2
			1	1
			2	2
			1	1
			3	2
			1	1
			4	2
			1	1
			1	1
			3	2
			1	1
			1	1
			3	2
			1	1

PANEL NUMBERS	PROPORTIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont.			2	1	2
			3	2	3
			2	1	1
			2	1	5
			4	3	3
			3	3	5
			1	1	3
			3	3	3
			3	3	4
			3	3	3
			3	4	3
			6	3	5
			6	3	8
			2	1	2
			4	2	6
			1	1	1
			8	3	9
			1	1	1
			2	1	2
			7	3	4
			1	1	1
			2	1	1
			1	1	1
			3	3	4
			3	3	2
			1	1	1
			2	1	2
			2	1	3
			2	2	2
			1	1	1
			2	1	1
			2	2	1

~~CONFIDENTIAL~~

6

ARMY-89-A186574 2291 53 2292-49 53 45°

וְאֶת־בָּשָׂר וְאֶת־מֵבָד
עַל־בָּשָׂר וְעַל־מֵבָד

PENETRATION OF SHELLS IN PANELS

RECEIVED ON 9-5-61 122 1-1000 24-1-30

Sent 34
15 PAMELS WITH 34000 gm S. 34 APR

REF ID: A6281

SEARCHED _____ Sheet 12 of 43

1963 No. 20

ESSEQUIBLE, S.

PANEL NUMBERS	PERFORATION		PENETRATION		
	LENGTH	DEPTH	LENGTH	DEPTH	DEPTH
36 Con	8	5	3	2	2
	8	5	2	2	3
	3	4	2	2	1
	12	7	1	1	1
	8	5	4	3	3
	5	4	2	2	2
	6	2	2	2	2
	2	2	2	2	1
	11	3	3	2	1
	11	5	2	2	2
	12	4	1	1	1
	11	10	1	1	1
	10	4	2	2	2
	6	4	1	1	1
	10	8	2	3	4
	5	3	3	2	4
	8	4	1	1	1
	3	5	3	2	3
	12	3	3	2	3
	2	4	1	1	2
	2	5	3	2	3
	3	3	1	1	2
	8	9	1	1	1
	5	3	5	4	3
	5	4	1	1	1
	7	6	2	1	2
	15	5	1	1	1
	12	3	1	1	1
	12	7	3	3	3
	3	6	1	1	1
	6	2	5	3	5
	10	6	3	2	2
			2	2	2
			1	1	1

DANIEL NUMBERS	PROPORTIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33 Cont.			1	1	1
			3	3	4
			2	2	2
			3	2	3
			5	5	2
			2	1	1
			2	2	3
			2	3	4
			2	2	3
			1	1	1
			2	2	2
			5	2	5
			1	1	1
			1	1	1
			1	1	1
			2	2	2
			1	1	2
			2	2	2
			1	1	1
			1	1	1
			5	5	3
			1	1	1
			2	1	3
			1	1	1
			1	1	1
			2	1	2
			1	1	1
			1	1	1
			2	2	3
			1	1	1
			1	1	1
			2	2	2
			2	2	4

DRAFT 737 TO PEE AM
FORMERLY DRAFT 6301

DATE 1 JUN 54

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 120-mm. D-122A LOADED AT/0
SOVIET IN PANELS WITH RADIUS OF 30' AND FEET

PENETRATION OF SHELLS IN PANELS

PENETRATION OF SHELL 105mm, C-412A LOCATED 12/30

SOVIESE

IN PANELS WITH RADIUS OF 30'

AND

FLET

KAMMAGRA Sheet 14 of 48

TEST NUMBER Round No. 20

JACK HUNTER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
37 Cont.			1	1	1	38 Cont.	7	4	3	2	2
			2	2	2		3	6	1	1	1
			3	2	2				3	3	3
			1	1	1				1	1	1
			1	1	1				4	2	3
			1	1	1				1	1	1
			1	1	1				4	3	5
			2	2	2				1	1	1
			1	1	1				3	2	3
			1	1	1				4	3	3
			2	2	1				1	1	1
			2	1	2				5	3	3
			1	1	2				1	1	2
			2	2	1				1	1	3
			2	2	1				3	2	3
			1	1	1				3	4	3
			2	2	2				1	1	1
			1	1	1				1	1	1
			2	2	1				3	2	5
Total		7			71				3	2	4
									2	2	3
38	1	3	3	3	2				2	2	2
	3	3	4	3	3				2	2	3
	13	7	3	3	2						32
	3	6	1	1	1						
	4	3	1	1	1						
	3	2	1	1	1						
	13	5	1	1	1						
	5	7	1	1	1						
	7	5	1	1	1						
	5	3	2	2	1						
	3	4	1	1	1						
	8	6	2	2	1						
	6	5	2	2	2						

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 120mm O-412A LOADED 2/30

Soviet
IN PANELS WITH RADIUS OF 30'

AND FEET

LOT NO.
EXPIRED
FIREARM

DATE 21 Feb.

PRIORITY NUMBER

SHOOT 15 OF 43

TEST NUMBER Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
39 Cont			2	2	2
			2	1	1
			1	1	1
			3	2	3
			2	2	2
			2	2	1
			2	2	3
			1	1	1
			2	1	1
			1	1	1
			3	3	2
			2	2	2
			3	2	2
			2	2	1
			1	1	1
			5	3	6
			2	2	2
			2	2	1
			1	1	1
			2	2	2
			1	1	3
			Total	9	50
			40	6	3
				3	2
				5	2
				2	2
				5	1
				9	1
				3	1
				4	1
				7	2
				3	2
				4	1
				1	1
				1	1
				2	2
				2	4
				2	2
				2	2
				1	1
				3	2
				1	1
				1	1
				1	1
				5	5

CONFIDENTIAL

PENETRATIONS SHELLS IN PANELS

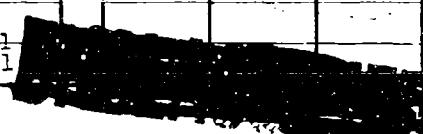
TEST NO. 1000
PERIODIC TEST
X-1000 TEST SHEET 11 of 46
DATA SHEET Round No. 20
ROCKET NUMBER

PENETRATION OF SHELL 1000, 0-41001 LOADED AT/60

Soviet

IN PANELS WITH THICKNESS OF 30 FEET AND FEET

PANEL NUMBERS	PENETRATION		PENETRATIONS		
	LENGTH	WIDTH	DEPTH	DEPTH	WIDTH
40 Cont	1	1	1		
	3	3	2		
	5	3	6		
	1	1	1		
	2	1	1		
	1	1	1		
	3	3	5		
	3	2	1		
	1	1	1		
	3	2	2		
	1	1	1		
	2	1	1		
	2	2	2		
	2	2	2		
	3	2	2		
	2	3	3		
	4	3	4		
	1	1	2		
	3	2	2		
	1	1	1		
	2	2	2		
	2	0	2		
	2	2	4		
	1	1	1		
	4	2	4		
	2	2	2		
	2	2	1		
	1	1	1		
40-21	3		47		
41	5	3	3	5	
	12	4	4	1	1
	4	3	4	2	1
	13	5	1	1	1



MATERIAL LABORATORY PROVING GROUND NO. 445

PANEL NUMBERS	PENETRATION		PENETRATIONS		
	LENGTH	WIDTH	DEPTH	DEPTH	WIDTH
41 Cont	8	4	4	4	9
	8	6	3	2	3
	4	3	1	1	1
	10	5	3	2	1
	7	3	3	2	1
	12	7	2	2	2
			2	2	2
			2	3	2
			1	1	1
			3	6	7
			2	2	2
			7	3	7
			4	2	1
			3	2	1
			1	1	1
			2	2	2
			3	2	4
			2	4	10
			3	2	2
			3	3	1
			4	2	5
			1	1	1
			3	1	1
			2	2	2
			3	2	5
			3	2	2
			2	2	2
			5	3	7
			3	2	1
			4	3	5
			2	2	2
			5	1	1

ORDERS 737 18 FEB 48
FORMERLY APPROVED 201

PENETRATION OF SHELLS IN PANELS

PENETRATION OF SHELL 120mm, O-182A LOADED 12/80
Soviet

IN PANELS WITH RADIAL C. 80°

AND

FEET

ON N.Y.
WINDING

DATE 31 OCT

FIREARMS NUMBER

EXHIBIT 100 Sheet 17 of 41

GUN NUMBER Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
41 Cont.			1	1	1
			2	3	4
			3	2	3
			2	2	2
			1	1	1
			2	7	3
			4	3	5
			6	3	6
			2	2	2
			2	2	2
			4	1	1
Total	10		57		
42	12	6	6	4	6
	6	3	4	3	10
	13	9	3	2	1
	3	4	3	3	6
	12	6	7	3	6
			2	2	2
			2	2	2
			1	1	1
			3	2	1
			5	4	1
			3	3	1
			1	1	1
			3	1	1
			1	1	1
			1	1	1
			2	2	2
			5	3	2
			3	2	1
			1	1	1
			1	1	1
			3	2	2
			5	3	2
			3	2	1
			1	1	1
			1	1	1
			2	2	2
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1	1	1
			3	1	1
			5	2	2
			2	2	2
			2	2	2
			1	1	1
			3	1	1
			1	1	1
			2	2	2
			1</		

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-402A 104360 17/90

Soviet

IN PANELS WITH RADIUS OF 30° AND

PANEL **PERFORATIONS** **PENETRATIONS**

NUMBERS LENGTH WIDTH LENGTH WIDTH DEPTH

DATE 31 July 82

FIGURE 9 - NOVEMBER

PRINTER NUMBER

100000000X Sheet 18 of 46

LEADERWELL Found No. 29

RICKET NUMBER

PERFORATIONS	PENETRATIONS
--------------	--------------

5 15325 15325 15325 15325 DEBT

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
43	3	3	3	2	1
			1	1	1
			3	3	3
			1	1	1
			1	1	1
			3	1	1
			2	2	2
			1	1	1
			3	1	1
			3	1	1
			4	1	1
			3	3	8
			1	1	1
Total		1			14
45			4	3	10
			2	1	1
			4	3	2
			1	1	1
			2	1	1
			1	1	1
			3	2	3
			1	1	1
			2	1	1
			2	2	2
Total					10
46			2	1	3
			1	1	1
			2	1	1
			6	4	5
			2	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
46 Cont.			1	1	1
			2	1	1
			4	2	2
			1	1	1
			1	1	1
			1	1	1
			2	1	2
			2	1	2
			1	1	1
Total					13
47	5	4	3	2	2
			3	2	2
			1	1	3
			1	1	1
			3	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			2	1	2
			3	2	4
Total		1			13
48			1	1	1
			1	1	1
			2	1	2
			3	2	3
			2	1	1
			1	1	1
			1	1	1
			2	1	1

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122 mm, O-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF 30

LN9

F E E

DATE 31 July 87

DATE 31 July 87

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[View Details](#)

45

REFERENCES

GENERATIONS

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS			
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH			
48 Cont.			2	1	1				1	1	1	
			4	2	3				1	1	1	
			3	2	3				4	3	5	
			2	1	1				1	1	1	
			2	2	1				2	2	1	
			1	1	1				2	1	1	
			4	2	6				1	1	1	
			3	2	4				1	1	1	
			2	1	1				2	1	1	
			2	1	1				1	1	1	
			1	1	1				1	1	1	
			1	1	1				1	1	1	
			1	1	1				2	2	2	
			4	3	3				2	1	1	
			3	2	2				Total	1	23	
			1	1	1							
			2	1	1							
			2	1	3							
Total					23							
49	3	2	2	2	1				50	3	2	2
			1	1	1					1	1	1
			1	1	1					1	1	1
			5	3	5					1	1	1
			2	2	2					2	2	1
			1	1	1					2	1	1
			1	1	1					3	2	1
			2	1	1					3	2	1
			2	2	2					3	2	2
			2	1	1					2	2	2
			1	1	1					1	1	1
			2	1	2					2	2	2
			2	2	2					3	2	1
			3	2	2					1	1	1

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 JUN 46

FIRING RING NUMBER

PRIORITY NUMBER

TEST NUMBER Sheet 20 of 46

EXPERIMENT Round No. 20

PROJECT NUMBER

PENETRATIONS OF SHELL 122MM, O-4624 LOADED AT/90

Soviet.

IN PANELS WITH RADIUS OF 301 AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	DEPTH	FEET	DEPTH
50 Cont		2	1	1	
		3	2	2	
		3	2	2	
		1	1	1	
		1	1	1	
		2	.2	2	
Total				24	
51	4	3	2	2	2
		3	2	5	
		3	2	2	
		5	5	6	
		1	1	1	
		1	1	1	
		1	1	1	
		2	1	1	
		1	1	1	
		2	2	1	
		2	1	1	
		2	1	1	
		2	2	2	
		2	1	1	
		2	1	1	
		1	1	1	
		3	2	1	
		2	1	1	
		2	2	3	
		2	2	2	
		2	1	1	
		1	1	1	
		3	2	1	
		2	1	1	
		2	2	3	
		2	2	5	
		3	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		3	2	1	
		2	2	2	
		1	1	1	
		2	1	1	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	1	1	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1	1	
		1	1	1	
		3	2	2	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	3	
		2	1	1	
		3	2	2	
		1	1	1	
		2	2	2	
		1	1		

PENETRATIONS SHELLS IN PANELS

LOT NUMBER
EQUIPMENT NUMBER

DATE 31 July 48

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/30

PRIORITY CLASS

EXPERIMENTAL Sheet 21 of 46

TEST NUMBER Round No. 20

ROCKET NUMBER

Soviet

IN PANELS WITH RADIUS OF 30° AND

FEET

53 Cont.

2 2 2

1 1 1

3 2 2

1 1 1

2 1 1

1 1 2

3 2 2

1 1 1

4 3 5

2 1 1

3 3 2

1 1 1

3 1 2

1 1 1

1 1 1

1 1 1

2 2 2

2 1 1

1 1 1

Total 1 23

54 5 2 2 1 1

1 1 2

1 1 1

1 1 1

1 1 2

1 1 2

1 1 1

1 1 1

2 2 1

3 2 2

1 1 1

1 1 1

Total 1 24

54 Cont.

2 2 2

3 2 2

1 1 1

1 1 1

1 1 2

1 1 1

2 1 2

1 1 1

1 1 1

1 1 5

1 1 1

3 1 2

2 2 2

1 1 1

3 2 2

2 1 1

Total 1 29

55 6 5 5 3 2 2

1 1 1

1 1 2

2 2 3

2 1 2

3 2 1

2 2 3

2 1 2

3 1 1

3 1 2

1 1 1

3 1 2

4 1 2

3 1 2

PENETRATIONS : SHELLS IN PANELS

DATE 31 July 48

PENETRATIONS OF SHELL 122mm, C-403A LOADED 17/80

Soviet

IN PANELS WITH RIBBON OF 301 AND FEET

LOT NUMBER
FIR 48 R. S. NUMBER

PRIORITY NUMBER

EXCEMPOCK Sheet 22 of 48

SHELL NUMBER

HOLE NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55 Cont			3	2	3
			2	1	1
			3	1	5
			3	1	4
			3	1	5
			3	1	2
			1	1	1
			3	3	1
			3	2	2
			4	3	4
			2	1	1
			1	1	1
			6	2	5
			2	2	2
-C-1	1		30		
52	6	5	4	1	2
			2	2	3
			3	1	2
			4	2	3
			2	2	2
			2	1	2
			1	1	2
			3	3	2
			3	3	1
			3	1	2
			3	1	2
			3	2	3
			3	3	3
			3	1	2
			2	2	2
			2	2	2
			4	3	4
			1	1	1
			2	1	1
			2	1	2
			4	2	2
			2	2	2
			3	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
55 Cont			2	2	6
			2	2	3
			2	1	2
			3	1	3
			3	1	2
			4	4	2
			2	1	1
			1	1	1
			2	1	1
			2	2	2
			2	1	1
			3	1	2
			1	1	1
			4	4	3
			2	1	2
			1	1	1
			4	2	3
			2	2	2
			2	1	2
			4	1	2
			1	1	1
			2	1	1
			2	1	1
			2	1	2
			4	2	2
			2	2	2
			3	2	1
Total	1		42		
57	7	5	4	2	2
	3	4	3	1	1
	1	1	1	1	1
	2	1	2	1	1
	2	1	2	1	2
	4	2	2	2	2
	2	2	2	2	2
	3	2	1	1	1

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122MM, O-462A LOADED HE/90
Soviet
IN PANELS WITH PACIFIC OF 300 FEET

P-1182-A-1

DATE 31 JULY 51

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

ATTN: H. W. GORE Sheet 33 of 46

SOCIAL NUMBER Round No. 20

BUCKET NUMBER

ORDBG-737 18 FEB 43
FORMERLY SPOTZ-F-281

PENETRATION OF SHELLS IN PANELS

PERFORATIONS OF SHELL 122 mm. G-4 USA LOADED AT 1/30

Soviet

IN PANELS WITH RADII OF 30' AND

PANEL	PERFORATIONS	PENETRATIONS
-------	--------------	--------------

NUMBERS	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
---------	--------	-------	--------	-------	-------

LOT NUMBER
FIRING NUMBER
PRIORITY NUMBER
REVIEW SHEET Sheet 24 of 45
DESCRIPTION Round No. 20
ROCKET NOV 1968

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH		
53.1			4	2	3				2	1	2
			5	1	3				1	1	1
			4	1	2				2	1	1
			4	1	2				1	1	1
			1	1	1				3	1	1
			2	1	1				2	2	2
			4	3	2				1	1	1
			2	1	1				4	2	2
			2	1	1						10
			3	1	1						
			4	3	2						
			2	1	1						
Total					12						
53.2			4	2	5				4	2	2
			2	1	1				2	1	2
			1	1	1				3	1	1
			2	2	2				2	2	2
			1	1	1				1	1	1
			2	1	1				3	2	2
			2	1	1				4	2	2
			3	2	3				1	1	1
			1	1	1				2	1	1
Total					9				1	1	1
53.3			1	1	1				3	2	3
			1	1	1				2	1	1
			2	1	1				2	2	2
			1	1	1						5
			1	1	1						
Total					5						
53.4			2	1	1				4	4	1
			2	1	2				1	1	1
									2	1	1
									2	1	2
									1	1	1
									1	1	1
									1	1	1

ORDBG-727 10 FEB 46
FORMERLY SPOT 3-F-281

FORMERLY 19072-F-28

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 128mm, O-462A LOADED AT/30

Soviet
IN PANELS WITH BACK OF 30° AND

167-A.4

DATE 31 July 5.

212143 2000-01-05 62

33 2215 11-1862

— — — — —

WILHELM Sheet 25 51 45
EQUATORIAL 5° N. 82

KENYON BOUND CO., LTD.

400-911-00024

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.1 Cont			3	2	4
			2	1	2
			2	1	3
			1	1	1
			3	2	3
			1	1	1
			1	1	1
Total					13
59.2			5	2	7
			2	1	3
			1	1	1
			1	1	1
			5	3	5
Total					5
59.3	7	6	3	2	2
	6	4	2	1	1
			1	1	1
			1	1	1
			5	3	3
			2	1	2
			2	1	2
			8	3	3
Total		2			9
59.4			4	2	4
			1	1	1
			1	1	1
			2	2	2
			1	1	1
			2	2	2
					2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
39.6 cons			1	1	1
			1	1	1
			2	1	1
			1	1	1
Total					11
53.5	11	6	3	2	2
			2	2	2
			3	1	2
			2	1	1
			3	2	2
			2	2	2
Total	1				6
59.6	4	4	3	2	2
			2	1	1
			3	3	1
		1			5
60.1	12	5	2	2	5
			1	1	1
			4	3	4
			1	1	1
			2	1	1
			2	1	1
			1	1	1
			3	2	2
			1	1	1
Total	1				10
30.2			2	1	1
			3	2	2
			1	1	1

ବୈଜ୍ଞାନିକ ପରିମାଣିକ ପରିକଳ୍ପନା

WMT-1000 ADDRESS FROM THE GROUND NO 445

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm. 0-412A LOADED AT/30

Soviet

IN PANELS WITH RADIUS OF 30'

AND FEET

PENETRATIONS OF SHELL 122mm. 0-412A LOADED AT/30

LOT NO.	DATE 31 July
FIRES RECORD NUMBER	
PRIORITY NUMBER	

PENETRATIONS Sheet 26 of 46

SHELL NUMBER

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
SO.2 Cont			4	3	3
			4	3	4
			1	1	1
			1	1	2
			3	2	2
			3	2	2
			2	2	1
			3	2	2
			1	1	1
			2	2	2
Total					13
SO.3	4	3	7	4	6
	7	4	1	1	1
	5	5	2	2	2
			1	1	2
			3	2	2
			2	2	2
			1	1	3
			3	2	4
			4	3	7
			5	4	7
			1	1	1
			2	2	5
			2	2	2
			1	1	1
			3	2	1
			2	2	1
			1	1	1
			3	2	4
			1	1	1
			5	2	5
			3	2	2
			2	2	2
			4	4	3
			1	1	1
			1	1	2
			2	2	2
			4	3	3
			3	2	3
			5	3	7
			4	3	4
			2	2	2
			2	2	2
			2	1	1
			3	2	6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
SO.3 Cont			1	1	2
			2	3	2
			3	2	2
			1	1	1
			2	2	2
			4	2	3
			1	1	1
			2	2	2
			3	2	3
			1	1	1
			2	2	2
			3	2	3
			1	1	1
			2	2	2
			3	2	3
			1	1	1
			2	2	2
			4	1	1
			1	1	1
			2	2	2
			4	3	3
			3	2	3
			5	3	7
			4	3	4
			2	2	2
			2	2	2
			2	1	1
			3	2	6

**OROBG-737 10 FEB 48
FORMERLY SPOTZ-F-201**

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm. Q-162A LOADED 25/50

Soviet

SOVIET
16 PANELS WITH RADII C

304 AND .

LOT NUM	DATE 31 July 1953
PRINTING RECORD NUMBER	
PRIVATE NUMBER	
PREMISES Street 27 of 46	
PROPERTY ROADM No. 20	
FEET	ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33.4 Cont			2	2	2
			1	1	1
			2	2	1
Total		2			23
50.5			10	4	4
			2	1	1
			2	2	2
			3	2	2
			1	1	1
			2	2	2
			3	3	5
			3	2	2
			2	2	3
			3	2	4
Total					10
52.6	12	4	4	3	2
			2	2	2
			1	1	1
			2	2	2
			3	2	2
			1	1	1
			2	1	1
Total		1			7
51.1			2	2	2
			5	2	2
			1	1	1
			2	2	2
			2	2	2
			3	2	4
			3	2	3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	DEPTH	LENGTH	WIDTH	DEPTH
31.1 2023			6	5	3
			12	4	4
			3	2	2
			1	1	1
			1	1	2
			4	3	1
			2	1	1
			1	1	1
Total 1					17
31.2	3	5	3	2	3
	5	4	1	1	1
			3	2	1
			2	1	1
			3	3	3
			1	1	2
			3	2	4
			3	2	2
			2	2	3
			3	2	5
			1	1	1
			3	2	3
			5	2	5
			4	2	3
			3	2	4
			2	2	2
			2	2	2
			1	1	1
			1	1	1
			2	1	1
Total 1		2			20
31.3	4	3	5	2	5
	6	2	4	2	5

ORDNCE-737 10 FEB 48
FORMERLY SPOTLZ-F-261

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122MM, 9-462A LOADED AT/30
IN PANELS WITH RADIUS OF 30' AND FEET

SOVIET

LOT NO.

DATE 31 JULY 48

SERIAL NO. & NUMBER

PRODUCTION NUMBER

MANUFACTURER Sheet 23 of 48

MODEL NUMBER Round No. 20

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
31.3 Total	5	3	1	1	1				2	2	2
	9	2	1	1	1				2	2	2
		1	1	1					4	4	4
		2	2	2		Total		3			15
		2	2	2							
		1	1	2		31.5	5	5	2	2	2
		2	2	2			5	3	4	3	3
		1	1	1			11	2	1	1	1
		7	4	8			3	2	2	1	1
		4	3	5					2	1	1
		5	2	6					1	1	1
		3	3	2					3	2	3
		4	3	4					1	1	1
		3	1	3					3	2	2
		1	1	1					3	2	2
		2	2	2					1	1	1
		1	1	1					3	2	2
		2	2	3					4	3	3
		2	1	1					2	2	2
		1	1	1					3	2	2
Total		4		46					5	3	5
									1	1	1
31.4	5	6	5	3	3				1	1	1
	10	7	4	2	4				2	2	2
	12	5	2	2		Total	4				19
		1	1	1							
		2	2	2		31.6	2	4	3	2	2
		2	1	1			4	3	3	2	2
		2	2	5			7	4	3	2	2
		2	2	2			3	3	2	2	1
		2	2	2			10	4	7	5	4
		2	1	1			4	3	3	3	2
		3	3	3					3	2	3
		2	1	1					3	2	3

CONFIDENTIAL

PENETRATION OF SHELLS IN PANELS

LOT NUMBER DATE 31 JULY 1946

FIRING POSITION NUMBER

PRIORITY NUMBER

ARMED FORCE Sheet 30 of 46

ARMED FORCE Round No. 20

PENETRATIONS OF SHELL 122mm, O-432A LOADED AT/50

WIND 10°

IN PANELS WITH RADIUS OF 30°

AND

FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3 Cont			2	2	9
			4	1	2
			6	2	9
			3	2	5
			7	3	9
			4	3	6
			4	3	4
TOTAL	6				17

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
62.3			2	1	1
			1	1	1
			2	1	1
			3	3	2
			5	3	6
			2	2	2
			5	3	4
			1	1	1
			4	3	6
			2	2	1
			1	1	1
			3	3	2
			5	4	5
			4	3	5
			2	1	4
			3	2	2
			1	1	1
			3	2	5
			2	1	1
			5	2	2
			3	4	6
			1	1	1
			3	2	3
			4	4	4
			2	1	1
TOTAL	1				26
62.3	3	4	8	4	3
	4	4	5	3	3

CONFIDENTIAL

ORDNO-737 19 FEB 48

FORMERLY SPOTZ-F-291

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 48

EIGHTH ROUND NUMBER

PRIORITY NUMBER

EXPERIMENT Sheet 31 of 46

SOVIET RND Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 122mm, G-462A LOADED AT/80

IN PANELS WITH RADIAL SOVIET 301 AND FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	DEPTH	LENGTH	WIDTH	DEPTH
62.5 Cont			2	1	1
			2	1	1
			6	3	3
			1	1	2
			1	1	1
			1	1	1
			4	2	2
			1	1	1
			2	1	1
			3	1	1
			1	1	1
			3	1	3
			5	1	3
			9	3	4
			6	3	4
			2	2	1
			9	4	7
			5	3	4
			2	2	1
Total	2		21		
63.1	7	5	2	1	1
	10	5	1	1	1
			2	2	2
			5	2	2
			5	3	4
			1	1	1
			2	1	1
			1	1	1
			5	3	4
			1	1	1
			3	2	2
			2	1	2
			4	3	2
			5	3	2
			1	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	DEPTH	LENGTH	WIDTH	DEPTH
63.2	7	3	5	3	3
	8	4	4	2	3
			2	1	1
			1	1	1
			2	1	1
			1	1	2
			3	2	3
			3	2	2
			5	3	5
			2	1	1
			3	1	2
			3	3	2
			2	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			1	1	1
			4	3	2
			5	3	2
			1	1	1

DRBG-727 18 FEB 46
FORMERLY SPOTZ-F-201

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 132mm, O-462A LOADED AT 1/30

Soviet
IN PANELS WITH RADIUS OF 30° AND

SET NUMBER
FIRING POSITION NUMBER
PRIORITY NUMBER
XEROXOBOOK Sheet 32 of 48
SHELL NUMBER
ROCKET NUMBER

R-118243

DATE 31 July

FEET

63.2 Cont.

Length Width Length Depth

6 4 4 4
5 3 4
1 1 1
Total 2 25

63.3 6 4 4 3 4
3 2 5
8 2 4
2 1 1
3 2 6
3 2 2
1 1 1
1 1 1
3 2 2
1 1 1
3 2 2
1 1 1
5 3 3
2 2 1
5 2 2
3 1 4
2 2 2
2 2 2
3 2 1
2 1 1
1 1 1
2 2 1
3 2 1
2 2 1
3 1 2
1 1 1
Total 1 22

63.4 3 4 3 5 4
3 3 2 1 1
7 5 1 1 1
7 5 1 1 1
7 3 3 3 2

FEET

63.4 Cont.

Length Width Length Depth

7 5 1 1 1
4 3 2 2 1
2 2 2 2 1
3 2 1 2 1
2 1 1 1 1
2 2 1 2 1
3 1 2 2 1
3 2 2 1 1
2 1 1 1 1
2 2 2 2 1
2 2 1 2 1
1 1 1 1 1
Total 7 32

63.5 5 3 7 3 6
8 3 4 3 2
5 3 2 2 2
2 2 1 1 1
4 3 5 5 5

CONFIDENTIAL

DRBG-727 18 FEB 46

EX-118243 DRUG-ABERDEEN PROVING GROUND NO. 115

B-1182-2

PENETRATIONS OF SHELLS IN PANELS					ARMY NUMBER FIRE NO. & ROD NUMBER PRIORITY NUMBER	DATE 31 July 55				
PENETRATIONS OF SHELL 122mm, G-462A LOADED AT/30					KATYUZHNA Sheet 33 of 48					
Soviet IN PANELS WITH RADIUS OF 30' AND FEET					PROJECTILE Round No. 20					
PANEL PERFORATIONS PENETRATIONS					ROCKET NUMBER					
PANEL NUMBERS	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH		
63.5 Cont			2	1	2			3	2	4
			4	1	1			3	2	5
			1	1	1			7	4	4
			1	1	1			1	1	1
			2	2	1			5	3	3
			3	2	1			2	1	1
			4	3	6			2	2	3
			5	2	4			3	2	1
			1	1	1			4	3	3
			3	2	2			2	1	1
			2	2	2			1	1	1
			2	1	1			2	1	2
			1	1	1			1	1	1
			1	1	1			2	2	2
			1	1	1			1	1	1
			6	3	2			1	1	1
			3	2	5			1	1	1
			5	3	2			Total	5	29
			1	1	1					
Total	3		25							
63.2	4	3	1	1	1					
	5	4	1	1	1					
	16	7	1	1	1					
	6	8	3	1	1					
	5	3	3	1	6					
			2	2	7					
			2	1	1					
			2	1	1					
			1	1	1					
			1	1	1					
			1	1	1					
			2	1	1					

CONFIDENTIAL

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT 80°
Soviet

IN PANELS WITH RADIUS OF 60° AND FEET

LOT NUMBER

DATE 31 JULY 48

FIRING ID NUMBER

PRIORITY NUMBER

HORNIGWOOD Sheet 34 of 48

EXPERIMENTAL Round No. 20

ROCKET NUMBER

13

17

20

23

24

26

Total

Total

Total

Total

Total

Total

Total

Total

13 Cont

17 Total

20

23

24

26

Total

Total

Total

Total

Total

Total

Total

Total

PENETRATION OF SHELLS IN PANELS

R-1118-22

PENETRATIONS OF SMALL 120MM, O-482A, LOADED AT 1/50

Soviet
IN PANELS WITH RADIUS OF 60° AND FEET

LOT NUMBER

DATE 31 July 1948

FIRING PLOT NUMBER

PRIORITY NUMBER

YFM-482A Sheet 35 of 46

TEST NUMBER Round No. 20

ROCKET NUMBER

ORDBG-737 19 FEB 48
FORMERLY SPOTZ-F-281

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER
FIRING S. NO. NUMBER
PRIORITY NUMBER

DATE 31 July 48

PENETRATIONS OF SHELL 120mm, D-462A LOADED AT/60
Soviet
IN PANELS WITH RADIUS OF 60' AND FEETEXPERIMENTAL Sheet 37 of 46
EXPERIMENTAL Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
33 Cont			3	1	1
			4	2	2
			4	2	2
			1	1	1
			3	5	5
			1	1	1
			3	2	1
			3	1	1
			3	2	2
			4	4	3
			3	2	1
			5	3	5
			4	5	2
			2	1	1
Total		25		42	
34	12	3	4	4	2
	16	3	4	4	2
	3	5	3	2	2
	15	5	2	1	1
	3	3	4	2	2
	11	3	4	3	3
	4	4	2	1	1
	10	4	5	3	1
	10	4	2	1	1
	5	3	3	2	1
	12	4	4	2	2
	7	3	5	2	5
	12	5	1	1	1
	19	5	4	3	4
	9	7	2	2	2
	5	4	2	1	1
	16	3	3	3	1
	14	7	3	5	6

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
34 Cont	9	6	1	1	1
	4	3	2	1	1
	9	6	4	1	2
	13	7	2	2	1
	4	2	5		
	4	1	4		
	4	2	4		
	4	1	2		
	3	1	1		
	3	1	1		
	4	2	1		
	1	1	1		
	2	2	2		
	4	3	2		
	3	2	1		
	1	1	1		
	6	4	4		
	4	4	7		
	4	2	4		
	2	2	2		
	4	1	1		
	2	2	2		
	2	2	4		
	1	1	1		
	6	2	1		
	7	3	5		
	1	1	1		
	2	2	2		
	6	4	3		
	7	4	3		
Total		22		47	
35	6	7	4	3	1
	4	6	4	2	2
	3	5	3	2	2

ORDNO-737 10 FEB 48

FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 48

VIRGINIA BEACHES

PRIORITY NUMBER

TECHNOMARX Sheet 33 of 46

NOTE: Round No. 20

PENETRATIONS OF SHELL 130mm, G-130A LOADED AG/30

Soviet

IN PANELS WITH RADIUS OF

30°

AND

FEET

HOLE NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
35 Cont	12	4	5	5	2
	3	4	3	2	1
	6	5	2	1	1
	19	5	3	3	1
	9	5	4	3	1
	14	4	2	1	1
	6	4	3	2	2
	9	6	2	1	1
			2	1	1
			3	2	1
			2	2	2
			1	1	1
			5	2	1
			1	1	1
			2	1	1
			3	2	1
			5	3	3
			2	1	1
			11	11	6
					6
					3
					3
					3
					3
					2
					2
					2
					2
					4
					4
Total	11		27		
36	12	5	4	4	2
	7	2	4	2	3
			7	4	3
			1	1	1
			3	1	2
			1	1	1
			3	4	2
			2	2	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
36 Cont			1	1	1
			3	2	1
			1	1	1
Total		2			11
37	8	4	6	4	6
	4	4	4	2	3
	7	5	4	3	2
	12	5	1	1	1
	11	11	6	3	6
			5	3	3
			3	2	2
			3	5	3
			3	2	2
			5	4	4
			4	2	2
Total	5				11
38	3	4	3	3	1
	6	3	3	3	2
	6	5	3	5	4
			2	2	2
			3	2	2
			3	2	1
			4	3	3
			4	4	4
			5	2	2
			4	2	3
			4	2	4
			4	2	3
			3	2	1
			1	1	1
Total	3				14

ORDNO-737 18 FEB 48
FORMERLY SPOTZ-P-191

PENETRATIONS OF SHELLS IN PANELS

DATE 31 JULY 53

PENETRATIONS OF SHELL 122MM, O-462A LOADED AT/30

LOT NUMBER

FIRING NUMBER

PRIORITY NUMBER

TEST NUMBER Sheet 39 of 46

TEST NUMBER Round No. 20

ROCKET NUMBER

Soviet
IN PANELS WITH RADIUS OF

60° AND

FEET

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
39	12	5	4	3	3
			2	1	1
			4	3	1
			4	3	2
			1	1	1
			3	1	1
			2	1	1
			4	1	1
			4	2	1
			7	4	6
			1	1	1
			2	2	1
			1	1	1
			2	2	1
			1	1	1
			6	3	4
Total		1			16
40	11	4	2	2	1
	7	4	5	3	2
	4	5	3	2	2
			3	2	1
			3	2	1
			4	2	2
			3	2	1
			2	1	1
			1	1	1
			5	2	9
Total		3			10
41	6	6	4	3	1
			4	3	2
			4	4	1
Total		1			3

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
42			3	1	1
			1	1	2
			4	3	2
Total					3
43			5	4	6
			7	3	2
			3	2	1
			1	1	1
			3	2	3
			2	2	1
Total					6
44			2	2	2
			2	3	1
			2	2	1
			1	1	1
			3	2	2
Total					7
45			3	3	3
			3	2	2
			3	2	2
			2	1	1
			2	2	2
Total					6
46	15	3	2	1	1
	15	3	4	4	1
			4	2	2
			1	1	1
Total					5

PENETRATIONS OF SHELLS IN PANELS

DATE 31 JULY 48

PENETRATIONS OF SHELL 122-mm. C-422A LOADED AT/90
IN PANELS WITH RADIUS OF 60' AND FEET

LOT NUMBER

FIRING RING NUMBER

PRIORITY NUMBER

EXPERIMENTAL SHEET 40 of 46

TEST NUMBER Round No. 20

PANEL NUMBERS	PERFORATIONS		PENETRATIONS			PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
45 Cont.			2	1	1	51			3	2	2
			1	1	1				4	3	5
			1	1	1				1	1	1
			2	1	1				1	1	1
			4	1	1				2	2	2
			1	1	1				3	3	1
			2	2	2				2	1	2
Total	1				12				3	3	2
									1	1	1
47	6	4	4	3	2	Total			6	6	3
			1	1	1						10
			2	1	1						
			5	1	1	52			3	3	2
			1	1	1				2	1	1
			3	2	2				2	1	1
			2	1	1				4	1	1
			2	2	1				1	1	1
Total	1				8				5	4	4
						Total					6
48			1	1	1				1	1	1
			1	1	1				2	2	1
			1	1	1				4	4	2
			1	1	1				2	2	2
			2	1	1				2	2	1
Total					5				1	1	1
									3	3	2
49			3	2	1				1	1	1
			1	1	1						6
			1	1	2	Total					
Total					3						
50			2	2	1	54			1	1	3
Total					1				3	2	
									1	1	1
									2	3	1

ORDERS 737 10 FEB 48
FORMERLY SPOTZ-F-201

PENETRATIONS OF SHELLS IN PANELS

TOP AND
FRONT AND SIDE NUMBER
FRIGATE NUMBER

DATE 1 July 48

PENETRATIONS OF SHELL 122MM, C-462A LOADED AT/90

Soviet

IN PANELS WITH RADIUS OF

60°

AND

FEET

XMAS 1948 Sheet 31 of 40
XMAS 1948 Round No. 30
FIRENCE NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	DEPTH	DEPTH	WIDTH
54 Cont			1	1	2
			1	1	1
			1	1	1
			3	1	1
Total				8	
55	5	5	2	2	2
			1	1	1
			1	1	1
			4	4	2
			3	2	2
			1	1	1
			1	1	1
			3	2	2
			1	1	1
			5	4	3
Total		1		10	
56			3	2	2
			4	2	2
			4	4	1
			1	1	1
			3	2	1
			3	2	3
			2	2	1
			2	2	1
			3	3	2
			3	2	2
			2	1	1
			4	2	3
			3	2	2
			2	2	2
Total				14	

PANEL NUMBERS	PERFORATIONS		PENETRATIONS				
	LENGTH	WIDTH	DEPTH	DEPTH	WIDTH		
57				5	2	1	
				1	1	1	
				3	3	2	
				2	2	2	
				3	1	1	
				2	2	2	
Total				1	1	1	
58.1			9	4	3	2	1
				2	2	2	
				4	2	4	
Total			1			3	
58.2			12	3	5	2	2
Total			1			1	
58.3			7	7	5	4	3
				1	1	1	
				2	1	1	
Total			1			3	
59.1				5	2	2	
				1	1	1	
				2	2	1	
				3	4	3	
				1	1	1	
				4	4	5	
				4	3	3	
Total				7			
CONT'D	CONT'D						
59.2			3	6	5	4	8
			3	5	5	3	2
			3	5	5	3	5

OROBG-787 18 FEB 48
FORMERLY SPOTZ-F-291

PENETRATION OF SHELLS IN PANELS

PENETRATIONS OF SHELL 122mm, O-462A LOADED AT/30

Soviet
IN PANELS WITH RADII OF 60° AND

IN PANELS WITH

IN PANELS WITH RADIFER

60' ANS

LOT NUMBER	DATE 31 July 35
S FIRING NUMBER	
PRIORITY NUMBER	
THREE SHEET Sheet 42 of 48	
YOMERKIN Round No. 20	
FEET	ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
59.2 cont			2	1	1
			1	1	1
			4	3	1
			2	2	2
			2	2	1
			1	1	1
			5	4	5
			6	2	3
			6	3	3
Total	2				12
59.3			4	3	1
			3	2	2
			2	2	2
			3	2	2
			5	3	4
			1	1	2
			2	2	2
			2	2	1
			3	2	4
			4	3	4
			1	1	1
			2	2	2
Total					12
60.1			7	3	2
			2	2	1
			10	5	5
			3	2	1
			7	7	4
			6	3	2
			1	1	1
			2	1	1
			4	3	4

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
60.1 Cont.			1	1	1
			1	1	1
			5	3	2
			5	2	2
			10	4	4
			2	1	1
			2	2	2
			2	2	2
			5	2	3
			6	2	2
			3	2	5
			1	1	1
Total					21
60.2			5	3	2
			3	2	2
			2	2	2
			5	3	2
			3	2	1
			2	1	1
			2	1	1
			1	1	1
			1	1	1
			4	2	1
			5	3	2
			4	2	2
			4	2	5
			3	2	2
			2	2	1
			3	3	3
			3	2	2
			1	1	1
			2	1	1

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PENETRATIONS : SHELLS IN PANELS

B-11832

DATE 31 July 48

PENETRATIONS OF SHELL 122mm, C-462A LOADED AT/90

Soviet
IN PANELS WITH RADIU OF

80°

AND

FEET

LOT NUMBER

FIRING ROD NUMBER

PRIORITY NUMBER

KIEVNIKOV Sheet 43 of 46

KIEVNIKOV Round No. 20

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
50.2 Cont			5	2	3
Total					21
50.5			5	2	2
			2	2	1
			2	1	1
			2	2	2
			2	2	4
			3	2	1
			12	4	4
			2	2	1
			2	2	1
			3	1	1
			1	1	1
			5	2	2
			4	2	2
			2	2	1
			2	3	4
			2	1	1
			2	1	1
			2	3	1
			3	3	6
			3	1	5
			4	3	2
			2	1	1
			3	3	2
Total					23
51.1			5	4	5
			2	2	2
			1	1	1
			1	1	1
			2	2	1
			5	3	2

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			2	2	1
			2	1	3
			3	1	1
			2	2	1
			4	3	4
			2	2	1
			1	1	2
Total					23
51.2			2	2	1
			3	1	1
			2	1	1
			4	2	2
			4	2	2
			4	3	2

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 July 48

FIRING POSITION NUMBER

PRIORITY NUMBER

TEST NUMBER Sheet 44 of 48

TEST NUMBER Round No. 23

PENETRATIONS OF SHELL 122mm, O-4624 LOADED AT/31

Soviet

IN PANELS WITH RADIUS OF 60° AND FEET

ROCKET NUMBER

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
51.2	1	1	1			
52.0	2	1	8			
	1	1	1			
	5	4	4			
	4	2	2			
	2	2	2			
	7	4	8			
	6	2	2			
	1	1	1			
	10	3	7			
	8	3	3			
	5	2	5			
	1	1	1			
	1	1	1			
	6	2	1			
Total			26			
51.3	4	2	8			
	2	2	1			
	1	1	1			
	8	4	4			
	3	2	1			
	3	4	5			
	6	3	3			
	1	1	1			
	1	1	1			
	4	2	2			
	1	1	1			
	2	1	1			
	1	1	1			
	4	3	2			
	2	2	1			
Total			15			

PANEL NUMBERS	PERFORATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
62.1				4	4	2
				1	1	1
				5	2	2
				4	2	2
				6	2	2
				2	1	1
				1	1	1
				4	2	1
				3	3	4
				3	2	2
				3	3	6
				2	1	1
				3	1	1
				9	3	3
				6	3	2
				6	3	3
				3	2	2
				2	1	1
				1	1	1
				1	1	1
Total			20			
62.2	9	3	3	3	3	6
				2	2	4
				3	1	1
				2	1	1
				1	1	1
				4	3	4
				5	4	1
				5	2	2
				1	1	1
				2	2	1

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ORDNQ-737 10 FEB 46
FORMERLY REPORT # 493

PUBLIC DOMAIN

PENETRATION OF SHELLS IN PANELS

DATE 31 JULY 19

DATE DUE

PENETRATIONS OF SHELL 122mm. Cal 6224 LOADED 11/92

卷之三

IN PANELS WITH REFL. OF

IN TAKING WITH ACCURACY.

CC-6624 LEADS 11/30

04050 21/30

Fig. 1

1987 May 7

卷之三

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SEARCHED INDEXED SERIALIZED FILED NO. 25

STYLIC HYPOTHESES

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LEFT	RIGHT	DEPTH	WIDTH	DEPTH
32-2 Cont			1	1	1
			6	4	5
			2	2	2
			7	3	3
			3	1	1
			1	1	1
			5	5	2
			5	2	5
			4	3	2
			1	1	1
			2	1	1
			1	1	1
Total		1			24
62-3	7	7	3	2	1
	5	3	1	1	1
			3	3	2
			3	2	2
			2	2	1
			2	2	1
			3	2	2
			4	3	2
			3	3	3
			4	3	1
			2	2	1
			2	2	1
			1	1	1
			4	3	3
			1	1	1
			2	3	3
			2	5	3
			2	1	1
			2	1	1

PANEL NUMBERS	PERFORATIONS		PENETRATIONS		
	LENGTH	W. DIA.	LENGTH	W. DIA.	DEPTH
			8	4	8
			2	1	1
			2	1	1
			2	2	1
			2	1	2
			1	1	1
			3	2	1
Total		2			27
SS.1	6	3	2		2
		1	1		1
		2	2		2
		3	3		7
		1	1		1
		1	1		1
		3	2		2
		1	1		1
		2	1		1
	7	3	3		3
		2	1		1
		2	1		1
		4	3		2
		2	1		1
		2	1		1
		3	3		1
Total	1				16
SS.2	3	3	2		2
	5	4	4		2
	8	7	2		4
	7	4	3		2
	7	3	2		2
	7	5	2		1

PENETRATION OF SHELLS IN PANELS

LOT NUMBER

DATE 31 JULY 6

FIRING RD NUMBER

PRIORITY NUMBER

ARTILLERY Sheet 46 of 46

GRENADIER Round No. 20

ROCKET NUMBER

PENETRATIONS OF SHELL 200mm, O-4627 LOADED 10/90

SOVIET

IN PANELS WITH RADIUS OF 60'

FEET

PANEL NUMBER	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
63.2			5	6	2
CAGE			5	1	3
			1	1	1
			1	1	1
			2	1	1
			1	1	1
			1	1	1
			3	2	4
			2	1	1
			2	2	2
			3	2	2
			2	2	2
			1	1	1
			4	3	2
			3	2	2
			2	1	1
			1	1	2
			2	1	1
			4	1	1
			4	1	1
			1	1	1
			2	1	1
			3	2	1
Total	6				30
63.3	8	7	6	3	1
			4	3	3
			5	4	3
			2	2	2
			1	1	1
			1	1	1
			3	2	3
			1	1	1
			7	3	1

PANEL NUMBER	PERFORATIONS		PENETRATIONS		
	LENGTH	WIDTH	LENGTH	WIDTH	DEPTH
			6	3	3
			8	2	2
			2	1	1
			1	1	1
			2	1	1
Total	1		1		14
			TOTALS		
			60'	Radius	134
					748

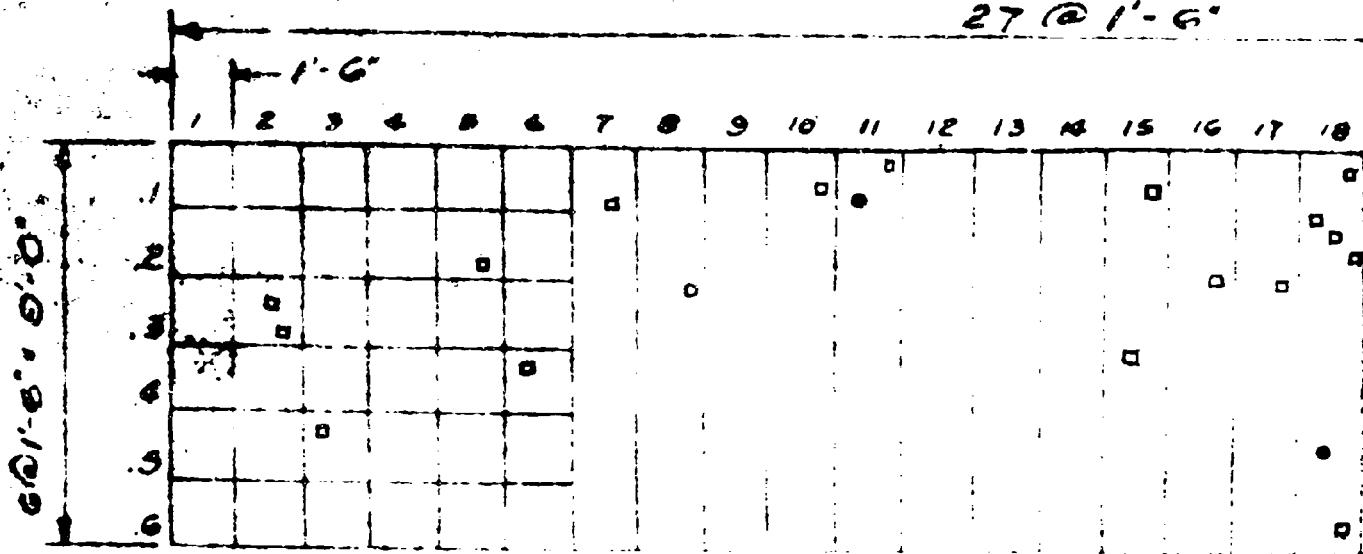
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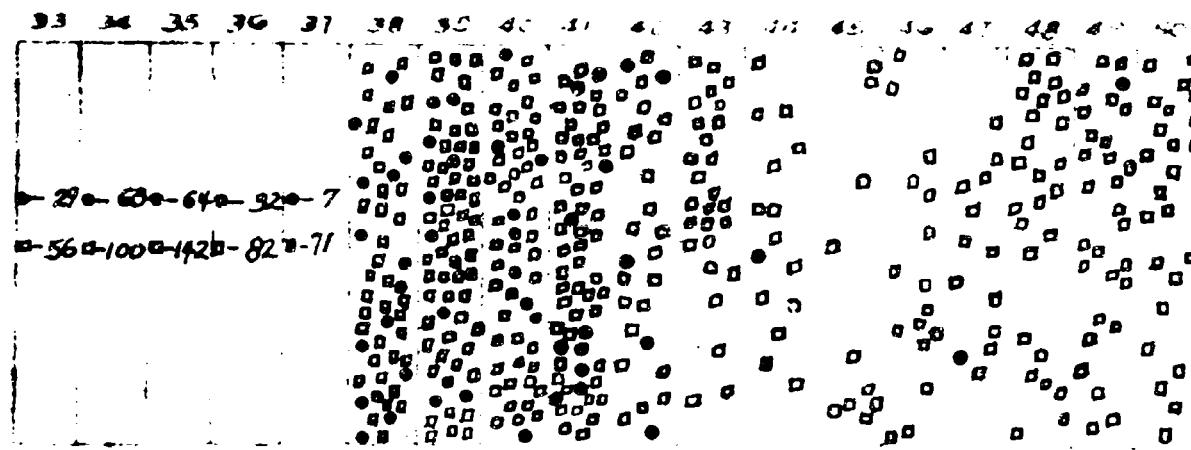
PANEL A

30 FT RADIUS 180°

27 @ 1'-6"



27 @ 1'-6"



1" NO. 3 FINE BOARLIS (DATA FILE) PLATE 2

DATE: 31 JULY 53 RD.NO. 20

PERFORATIONS: 0

SHELL: 122MM, SOVIET

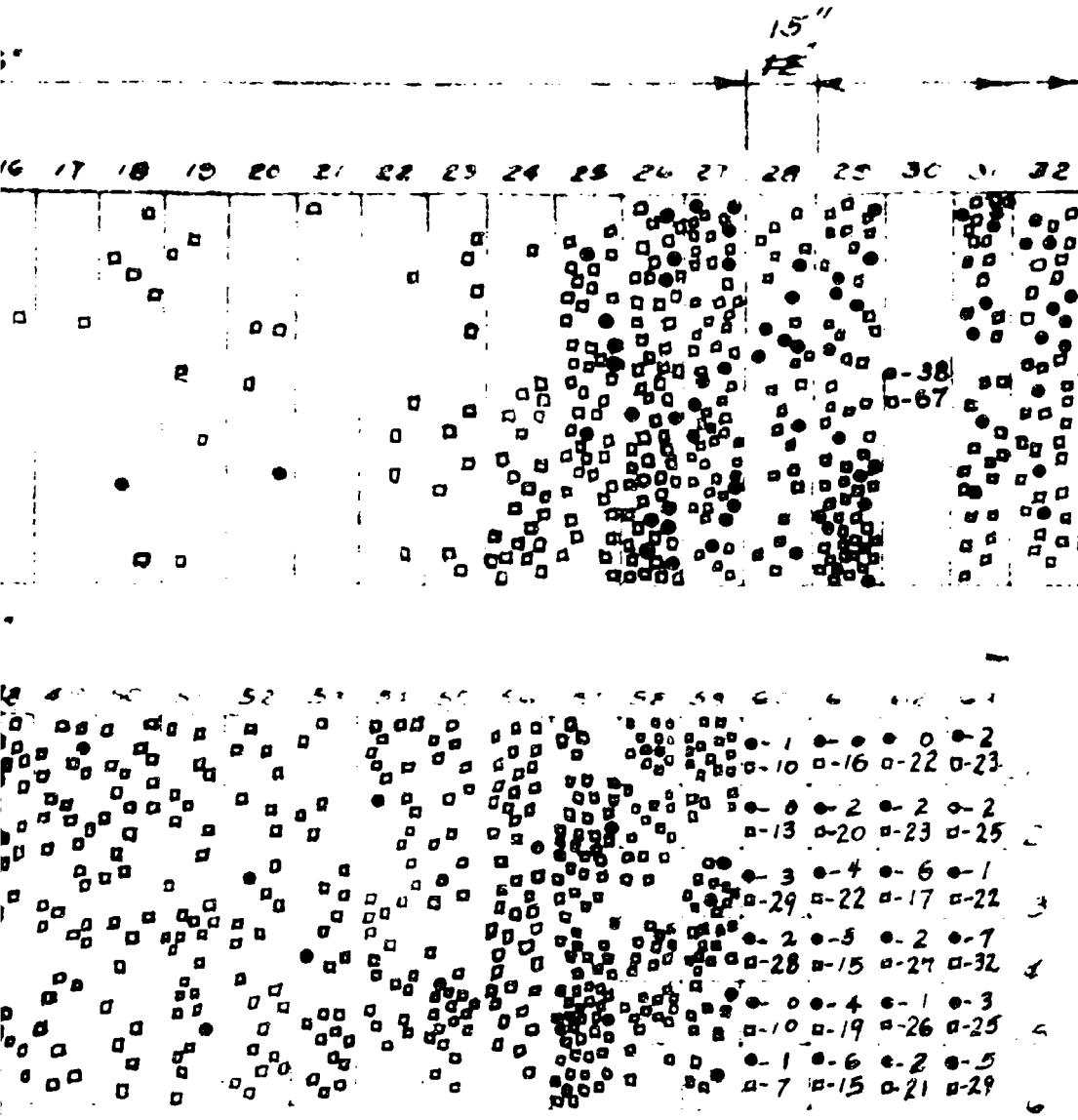
PENETRATIONS: 0

POSITION OF SHELL: HORIZONTAL

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A

S 180° ARC



2

17.18.2 18.21.22.23

RANGE OF PRACTICABLE SECTION

NS: 0 - 426

NUMBER OF CHANNELS

FUR

NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT RADIUS)

ABOVE AND BELOW GROUND

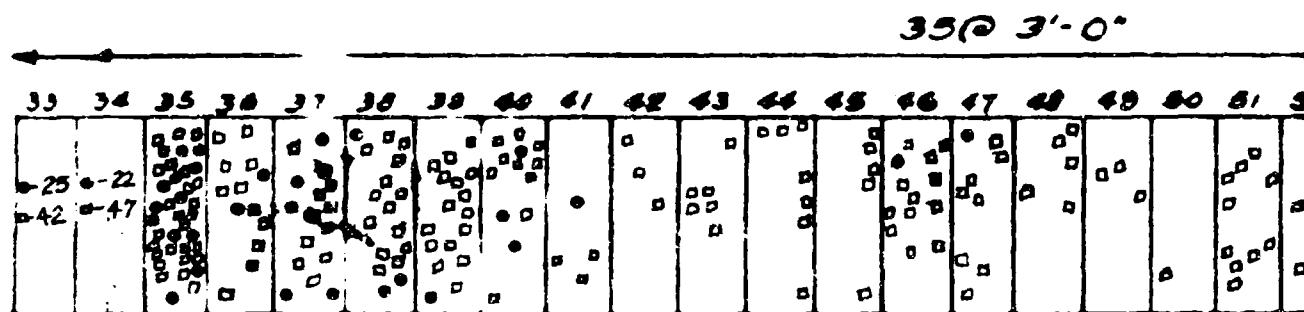
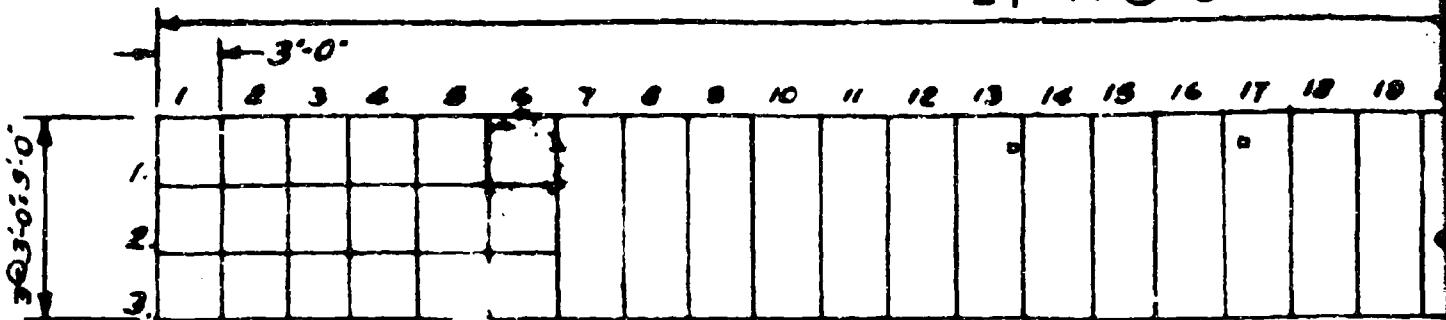
2028

20 3

B-11802

CENTER HORIZONTAL

PANEL B
60 FT. RADIUS 180° A
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DERESSED) PLACED VE

DATE: 31 JULY 53 RD.NO. 20

PERFORATIONS: 0- 134

SHELL: 122MM, SOVIET

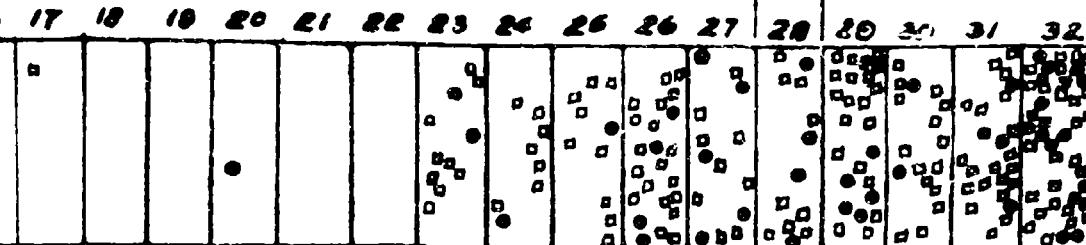
PENETRATIONS: 0- 743

POSITION OF SHELL: HORIZONTAL

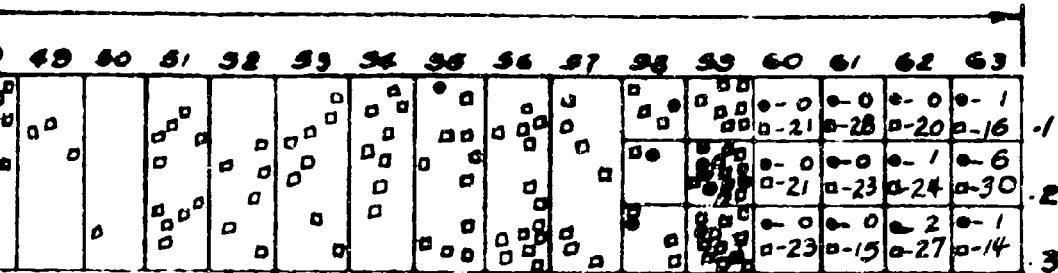
B

5 180° ARC

0°



-0°



2

ACED VERTICALLY.

RANGE OPERATIONS SECTION

O- 134

D- 743

12
LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD
OCT 27 1944

ARG 11816-14 PR

FIRING RECORD NO. B-11822
INCLOSURE 3

ROUND NO. 13

8 October 1952

SHELL, HE, 122mm, Soviet
MODEL, CP -462, Ammonium Nitrate 20% - TNT 20%

SHELL MARKINGS

OVERSE

SI
267-45
122
—

REVERSE

AT/CO
[]
OP - 462

BASE

78
51 45
C

Shell has one split rotating band.

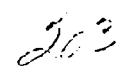
Weight of Shell w/o Components - 45.64 lbs.
As Fired - 45.76 lbs.

Distance from Shell to center of the 0.020" duralumin flash target - 22.67 ft.

Shell before firing is shown in APG Photograph No. A78157.

Recovered fragments with their respective weights and velocities are shown in
APG Photograph No. A97558.

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FRAGMENT VELOCITY DATA

P-1109

Test of Shell; H.E., 122mm, Soviet, AT/20

Side Velocity Box Data

Proof Director Mr. G. L. Rogers

Date Fired 8 Oct 1952

Distance from detonation point to target 221.8 feet. Round No. 13

Round statically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
1	N.R.		17	2	2994	33	3	
2	3	3124	18	15	3284	34	2	
3	N.R.		19	250	2828	35	N.R.	3181
4	1		20	61	2951	36	300	3181
5	2	3054	21	N.R.		37	2	
6	6	3214	22	45	3284	38	546	2679
7	28	3328	23	11	3284	39	61	2314
8	N.R.		24	9	3085	40	408	2237
9	N.R.	3025	25	13	3133	41	25	2614
10	04	2818	26	92	3133	42	2	2121
11	N.R.	3039	27	14	3133	43	5	
12	N.R.	3099	28	28	3133	44	134	2596
13	N.R.		29	14		45	N.R.	
14	N.R.		30	13	3085	46	N.R.	
15	N.R.	3039	31	83	3085	47	3	
16	N.R.		32	8	3133	48	27	

Average velocity 2968 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.6% for the highest velocity and \pm 3.0% for the lowest velocity.

Sheet 1 of 2

FRAGMENT VELOCITY DATA

Test of Shell, H.E., 122mm, Soviet

Side Velocity Box Data

Proof Director Mr. O. D. Rogers

Date Fired 8 Oct 1952

Distance from detonation point to target 22' 8" feet. Round No. 13

Round specifically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	N.R.		65	N.R.	3133			
50	7		66	1	3133			
51	4		67	25				
52	572(2)		68	198				
53	3		69	166(2)				
54	N.R.		70	53				
55	N.R.		71	680	2950			
56	18	2453	72	28				
57	63		73	151				
58	6	2263	74	311				
59	N.R.		75	14				
60	N.R.		76	15				
61	N.R.		77	N.R.				
62	543(2) 3039		78	N.R.				
63	21(2) 3039		79	455(2)				
64	N.R.							

Average velocity 2968 ft/sec.

NW - no velocity recorded.

NR - not recovered.

Individual velocity inaccuracies are less than $\pm 3.6\%$ for the highest velocity and $\pm 3.0\%$ for the lowest velocity.(2) - total weight of two pieces.
(n) - total weight of n pieces.

Sheet 2 of 2

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Control Document Serial

PENETRATIONS SHELLS IN PANELS					LOT NUMBER	DATE 08 Oct 52
PENETRATIONS OF 122mm, OR-462 LOADED AT/80					SHOOTER NUMBER	
IN PANELS WITH LENGTH 30' AND FEET					PRIORITY NUMBER	
PANEL NUMBERS LENGTH WIDTH DEPTH PENETRATIONS					ROCKET NUMBER	
PANEL NUMBERS	LENGTH	WIDTH	DEPTH	PENETRATIONS	LENGTH	WIDTH
2.5				10 8 2	Total	
				1 1 1		
Total				2	9	
						4 3 5
						3 3 2
3.1				2 2 6	Total	
				3 2 3		
				1 1 1		1 1 1
				2 2 1	10	
Total				4	Total	
						1 1 1
3.2				1 1 1	12	
				1 1 2		3 2 2
Total				2		1 1 1
						3 2 2
					Total	
						3
4.2				2 2 10	13	
				1 1 2	4	3
				2 2 7	Total	1
Total				3		
					14	
						3 2 2
4.5				2 2 4	Total	
				2 2 1		1
				1 1 1	15	
Total				3		5 2 8
					Total	
						1
5.4				8 2 4	17	
Total				1		5 2 6
						4 3 1
					Total	
						2
6.3				3 1 3	20	
Total				1		3 2
					Total	
						1
6.4				4 1 4	22	
Total				1		3 2 10
7				3 3 1	Total	
						1

PENETRATIONS SHELLS IN PANELS

LOT NUMBER
FIRING P. NUMBER
PRIORITY NUMBER

DATE Oct 52

PENETRATIONS OF SHELL 122mm, OF-400 AT 60°

XWJWKKK Sheet 2 of 12

Soviet

XWJWKKK Round No. 13

IN PANELS AT THE PACIFIC 30° AND

FEET

PANEL NUMBER	PENETRATIONS		PENETRATIONS		PANEL NUMBER	PENETRATIONS		PENETRATIONS				
	LENGTH	WIDTH	DEPTH	DEPTH		LENGTH	WIDTH	DEPTH	DEPTH			
23	4	3	4	2	1	28 cont		1	1	2		
	4	2	2	2	2			1	1	1		
		2	1	4						4		
		1	1	1								
Total		2			4	2	3	1	1	4		
						3	3	2	1	2		
24	7	2	4	2	6	9	8	2	1	2		
		2	1	6		3	2	1	1	4		
Total		1			2			1	1	1		
						Total	4			5		
25	5	3	2	2	6	30	4	3	3	4		
	12	5	1	1	2		16	7	3	2	4	
	4	4	4	2	3		3	2	1	1	2	
	5	3	2	1	1			3	1	1		
Total		4			4			1	1	2		
26	8	4	1	1	2			1	1	1		
	22	8	1	1	1			1	1	2		
	5	2	2	1	1	Total	3			7		
	9	4	2	1	6	31	5	5	2	2	6	
	9	6	1	1	4		16	9	4	2	3	
	4	4	1	1	3		4	3	1	1	2	
	16	5						4	3	4	1	4
Total		7			6			7	7	2	2	5
27	36	12	3	2	5		4	3	4	1	4	
	3	3	1	1	1		4	3				
	8	5	2	1	1		5	3				
	4	2	3	1	2		4	3				
		1	1	2		Total	9			6		
Total		4			5	32	12	5	2	1	1	
							32	8	2	2	6	
30			3	1	2		16	8	1	1	1	
			4	2	8							

PENETRATIONS OF SHELLS IN PANELS

LOT NUMBER
FIREARM NUMBER
PRIORITY LEVEL

DATE 8 Oct 52

PENETRATIONS OF SHELL 122MM, OF-462 AT/60
Soviet

IN PANELS WITH LENGTHS 301 AND FEET

XXXXXX Sheet 3 of 12
XXXXXX Round No. 13

ASIDE NUMBER

PANEL NUMBERS	PENETRATIONS			PENETRATIONS			PANEL NUMBERS	PENETRATIONS			PENETRATIONS		
	LENTH	WIDTH	DEPTH	LENTH	WIDTH	DEPTH		LENTH	WIDTH	DEPTH	LENTH	WIDTH	DEPTH
32 cont	14	8	3	1	1	2	34 cont	30	8	2	2	2	2
	4	4	1	1	1	2		8	5	3	2	3	
	9	4	4	2	2	2		12	12	5	1	5	
	11	3	4	1	4			8	6	1	1	1	
			2	1	5			6	4	2	2	3	
			2	2	2			10	4	1	1	3	
			1	1	1			12	4	4	1	3	
			4	1	3			20	8				
			2	1	2			8	8				
			3	2	8			24	12				
			1	1	1			28	8				
Total	1	7			14			8	4				
								4	3				
33	42	16	2	2	5		Total		16			10	
	5	4	4	1	10								
	12	8	3	2	3		35	7	4	4	2	2	
	20	6	5	2	4			6	4	1	1	1	
	8	3	1	1	2			25	9	1	1	1	
	12	4	3	2	6			5	2	5	3	7	
	4	3	2	1	2			20	9	4	1	1	
	5	4	2	1	2			7	4	2	1	1	
	20	18	1	1	2			8	4	2	1	2	
	6	3	1	1	1			11	7	5	2	3	
	12	6	2	1	2				4	2	2		
	14	6	2	1	1		Total		8			9	
	20	4	3	1	2								
	5	4	5	2	4		36	8	4	2	1	1	
	52	8	4	2	6			7	3	1	1	1	
	28	8						11	7	1	1	1	
Total	1	16						12	6	7	1	2	
								13	10	4	3	5	
34	8	6	3	1	2			8	5	2	2	2	
	7	3	3	1	2			11	4	4	3	7	
	8	2	2	1	1			19	8	1	1	1	

PENETRATION SHELLS IN PANELS

DATE 8 Oct 7

PENETRATION OF SHELL 122 mm, QF-462 LOADED AT/60
Soviet

IN PANELS WITH PAPER OF 301 AND FEET

LOT NUMBER

FIRING POSITION NUMBER

PRIORITY

SIP

XXXXXX Sheet 5 of 12

XXXXXX Round No. 13

SECRET LEVEL

PANEL NUMBER	PERFORATIONS		PENETRATIONS		PANEL NUMBER	PERFORATIONS		PENETRATIONS	
	LENGTH	DEPTH	LENGTH	WIDTH		LENGTH	DEPTH	WIDTH	DEPTH
48	3	3	8	2	2	51 cont		2	1
	8	8	1	1	2			2	1
			1	1	2			3	2
			2	1	1	Total	1		10
Total	2			4		52	12	7	2
								1	1
49	7	3	1	1	2			4	1
	8	6	1	1	1			1	1
			4	2	2			2	2
			2	1	2			3	3
			4	3	3			4	2
			2	1	1	Total	1		8
			2	2	1				
			1	1	2				
Total	2			8		54	10	6	2
								2	1
50			1	1	2			1	1
			2	1	2			2	1
			2	1	1			1	1
			2	1	1	Total	1		5
			2	2	1				
			3	1	1			1	1
			1	1	2			2	1
			2	1	2	Total			2
			3	2	3				
Total				9		55		1	1
								2	1
51	8	6	2	1	2	Total		1	1
			3	1	1				
			2	1	1			1	1
			3	2	9				
			2	2	3			4	2
			1	1	1	Total	1		2
			2	1	1				

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PENETRATIONS - SHELLS IN PANELS

LOT NUMBER
FIREARM NUMBER
PROJECTILE NUMBER

DATE 6 OCT 52

PENETRATIONS IN SHELLS 22mm, GF-452 DATED AT/30

SOVIET

EXXENKSYNCH Sheet 6 of 12

EXXENKSYNCH Round No. 13

IN PANELS WITH A SIDE OF 301 AND FEET

PANEL NUMBER	PENETRATIONS					PENETRATIONS IN FEET	PENETRATIONS					PENETRATIONS IN FEET
	DEPTH IN FEET	ANGLE IN DEGREES	ANGLE IN DEGREES	ANGLE IN DEGREES	DEPTH IN FEET		DEPTH IN FEET	ANGLE IN DEGREES	ANGLE IN DEGREES	ANGLE IN DEGREES	DEPTH IN FEET	
58.2	8	7	1	1	1	60.3	4	3			1	
			1	1	1	Total		3				
Total		1			2	60.4	13	6	1	1	1	
58.3			2	1	1	Total		1				
			1	1	1	60.5	8	3	3	1	5	
Total					2	Total		1			1	
58.4			1	1	2	61.1	11	5	3	2	3	
			2	2	2							
			2	1	3				3	2	7	
Total					5	Total		1			2	
58.5	7	7	3	2	2	61.3	13	12	1	1	1	
	7	4					7	4	4	3	7	
Total		2			1	Total		7	3			
58.6	7	7	2	1	2			4			2	
Total		1			1	61.4	3	3	2	2	1	
58.7	7	4	5	2	8			4	4	2	1	1
	13	11					4	4	2	1	7	
Total		2			1	Total		2	1		5	
58.8	7	5				Total		3			4	
	10	5				61.5	12	12	2	1	1	
Total		2				Total		1			1	
60.1	10	8	2	2	4	61.6	3	3	3	2	3	
			3	2	4	Total		1			1	
Total		1			2	CONFIDENTIAL						
60.3	12	7	3	3	2	62.1		2	1	3		
	5	3				Total					1	

CSDM 200-1 FER AB
FORMER - FORT 5261

PENETRATIONS SHELLS IN PANELS

LOT NOV 52

DATE 6 Oct 52

PENETRATIONS BY SHELL 122mm, OP-452 LOADED AT/80
IN PARTS WITH PANEL 301 AND FEET

Soviet

FIRING P. NUMBER

PERIODITY: 10000

GUN: 7X Round No. 13

EXPOSURE: Street 7 of 12

RANGE: 10000

PANEL NUMBER	PERFORATIONS	PENETRATIONS		
	DEPTH	WIDTH	DEPTH	WIDTH
62.2	10	3	3	2
	15	1	3	1
	15	7	3	2
	5	2		
	4	3		
Total	5		3	
62.3	6	4	1	1
	4	3	3	2
		2	1	3
		3	2	4
		4	2	3
	2			5
62.4	5	3	3	2
	8	3	3	2
	4	3	3	2
		1	1	1
		1	1	2
Total	3		5	
62.5	4	4	3	2
		2	1	1
		2	1	2
Total	1		3	
62.6	6	3	10	3
	10	7	2	1
		3	1	3
		3	3	1
Total	2		4	
63.1	6	4	2	1
		2	1	2

PANEL NUMBER	PERFORATIONS	PENETRATIONS		
	DEPTH	WIDTH	DEPTH	WIDTH
cont			2	1
63.1			2	2
Total	1			4
63.2	6	4	2	2
	12	7	2	2
	6	3	1	1
	3	3	2	2
	8	5	2	1
Total	5			5
63.3	14	7	3	2
	12	7	3	3
	7	6	2	1
	20	16	2	1
	8	5	2	2
	3	3	2	1
	4	3		
	4	3		
Total	9			6
63.4	16	8	2	1
	12	9	1	1
	20	16		
	12	12		
	4	3		
	4	3		
Total	6			2
63.5	8	6	2	1
	8	5		
Total	2			1

INSPECTED NO. 449

PENETRATION. SHELLS IN PANELS

DATE 8-6-65 52

REGISTRATIONS OF S-75
122mm QF-462 LOADED AT/20
Soviet
PANTIS WIRE 301 446

XXXXXX Sheet 8 of 12
XXXXXX Round No. 13

30' PALS		30' PALS		30' PALS	
PANEL NUMBERS	PERFORATIONS	PANEL NUMBERS	PERFORATIONS	PANEL NUMBERS	PERFORATIONS
LENGTH	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH
53.6	8				
Total	1				
TOTALS					
30' Pals.	185		279		

CONTINUATION

ONCE 737 10 FEB 62
FORMERLY BUREAU 291

PENETRATION OF SHELLS IN PANELS

DATE 8 Oct 62

PENETRATIONS OF SHELLS IN PANELS
122MM OF-462 LOADED AT/30
SOVIET

IN PANELS WITH FENCE OF

601 AND

FLET

PANEL NUMBERS	SPECIFICATIONS			PENETRATIONS			PANEL NUMBERS	SPECIFICATIONS			PENETRATIONS		
	LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	LENGTH	WIDTH	DEPTH
17				3	2	1	31	4	3	8	2	8	
Total						1		16	12				
						.		8	8				
20				8	2	2		4	3				
Total						1	Total		4			1	
23				2	2	1	32	4	3	3	1	3	
Total						1		3	3	4	2	3	
						.		8	7	5	1	4	
24	7	3						7	3				
Total		1						6	4				
						.	Total		5			3	
25				12	4	9	33	4	4	2	1	1	
				4	4	8		44	12				
Total						2			7	8			
26	8	4				.	Total		3			1	
Total		1				.		34	40	8	5	2	
						.			10	6	3	2	
27	5	4				.			16	3	3	1	
	6	4				.			14	9	5	2	
Total	2					.			5	5	1	1	
28				3	1	2			20	8	2	1	
Total						1			15	8	2	2	
						.			3	3	3	2	
29	8	4	2	1	2				12	8			
	12	8	4	1	1				7	6			
Total	2				2	.	Total		10			8	
30				6	5	4							
Total						1							

GRENADA 19 FEB 49
FORMERLY AGO 2-F 291

PENETRATION OF SHELLS IN PANELS

DATE OCT 49

PENETRATION OF SHELL 122 mm CP-462 LOADED AT/80
BY THE SOVIET

ST. NUMBER

PLATE 10 NUMBER

PRIORITY NUMBER

XXXXXX Sheet 10 of 12

XXXXXX Round No. 13

ROCKET NUMBER

IN PANELS NUMBER OF EOT AND FEET

PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH
35	4	3	12	4
	16	3	5	3
	13	7	3	2
	8	4	4	3
	32	10		
Total	5			4
	8	7	12	4
	30	6	12	2
	9	5	4	2
	28	9	6	5
	17	13		
	32	9		
Total	6			4
	37		4	2
Total			1	
38		22	2	6
Total			1	
39	6	5		
Total	1			
41		10	4	2
Total			1	
43	8	5	3	2
	7	4		
Total	2			1
44	22	6		
	12	7		
Total	2			

PANEL NUMBERS	PERFORATIONS	LENGTH	WIDTH	DEPTH
46			3	2
Total				1
48			4	2
Total				1
49	8	6		
Total	1			
50	8	4	1	1
		3	3	2
Total	1			2
53			6	3
Total				1
54	7	4	2	1
	8	7	3	2
Total	2			2
55			1	1
		2	2	1
Total				2
56			2	1
		1	1	1
Total				2
57	9	7		
	4	2		
Total	20			ENTIAN

ORCH-737 12 10 63
FORMERLY ORCH-737 12 10 63

PENETRATIONS SHELLS IN PANELS

CUT NUMBER
SHELL NUMBER
PROJECT NUMBER

DATE 8 Oct 62

PENETRATIONS OF SHELLS IN PANELS, 01-1962 LOADED AT/80
Soviet
IN PANELS WITH LENGTH 60 AND FEET

XXXXXX Sheet 11 of 12

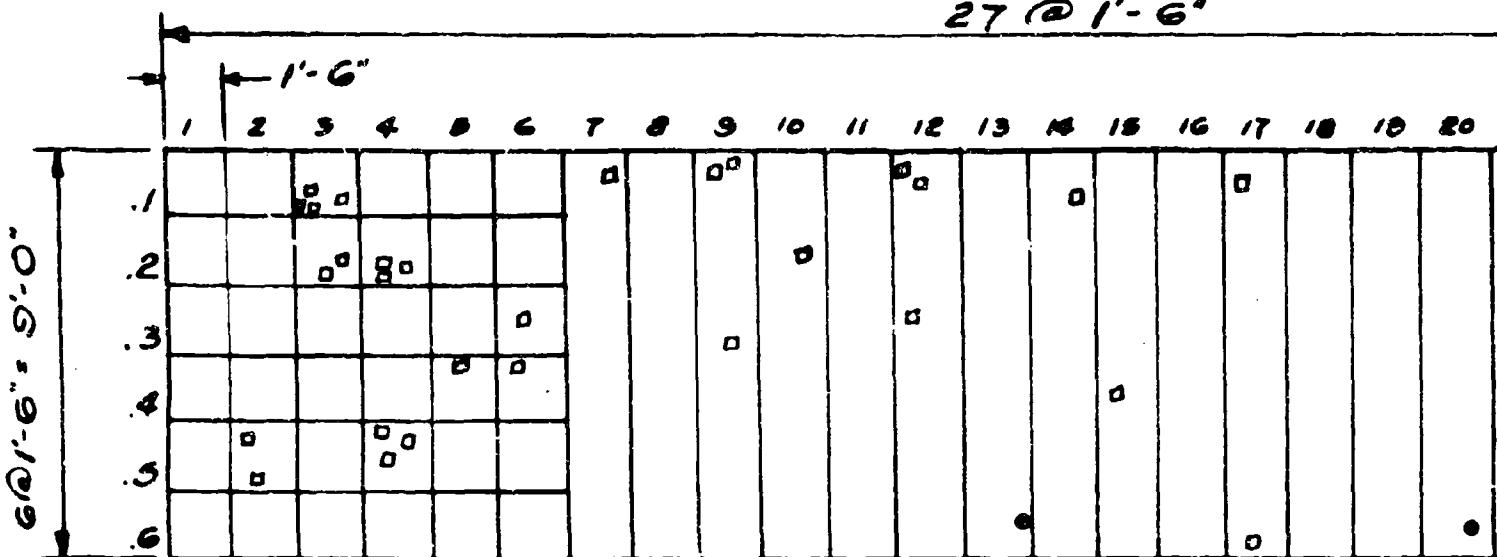
XXXXXX Round No. 13

PANEL NUMBER	LENGTH	WIDTH	LEVEL	ANGLE	DEPTH	PANEL NUMBER	LENGTH	WIDTH	LEVEL	ANGLE	DEPTH
58.1	6	6	1	1	1	62.1	9	5	6	3	5
	5	5				Total		1			1
Total	2				1	62.2	6	6	3	2	2
59.1	7	5	2	2	1		4	3	7	3	2
Total	1				1		10	5	2	2	1
	7	3	3	2	1		5	4	3	2	2
60.1	8	7	2	2	1		10	10			
	7	3	3	2	1		7	5			
	5	3				Total		6			4
Total	3				2	62.3	7	4			
60.2	12	9	3	2	4		8	6			
	8	5				Total		2			
	5	5									
Total	3				1	63.1	5	4	9	4	3
	7						7	4	3	2	2
60.3	10	8					4	3	2	1	1
Total	1						9	4	5	2	2
	7						7	4	5	5	3
61.1	6	4	1	1	1		10	7			
	5	4					8	7			
Total	2				1	Total		4	2		
								8			5
61.2	12	10	2	1	1						
	5	4	3	2	1	63.2	8	6	7	7	3
		2	2	1			8	4	2	1	1
Total	2				3		7	7	3	2	2
							5	4	4	3	2
61.3	8	7	3	3	2		5	4	1	1	1
		4	2	1			6	4	16	12	2
		4	2	1			4	2	1	1	1
Total	1				3		8	7	5	3	2
	2	1	1	1			14	31	3	2	1

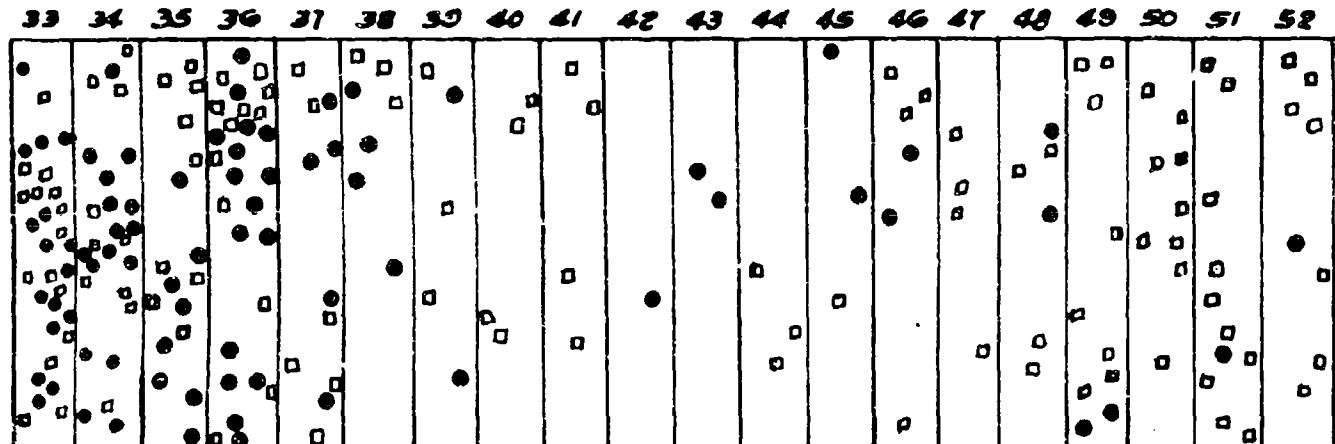
1

PANEL A

30 FT RADIUS 180° AR



35 @ 1'-6"



1" NO. 3 PINE BOARDS (DRESSED) PLACED VERT

SHELL - 122 MM, Ø 462, SOVIET

RD. NO. 13 OPERATIONS - 1

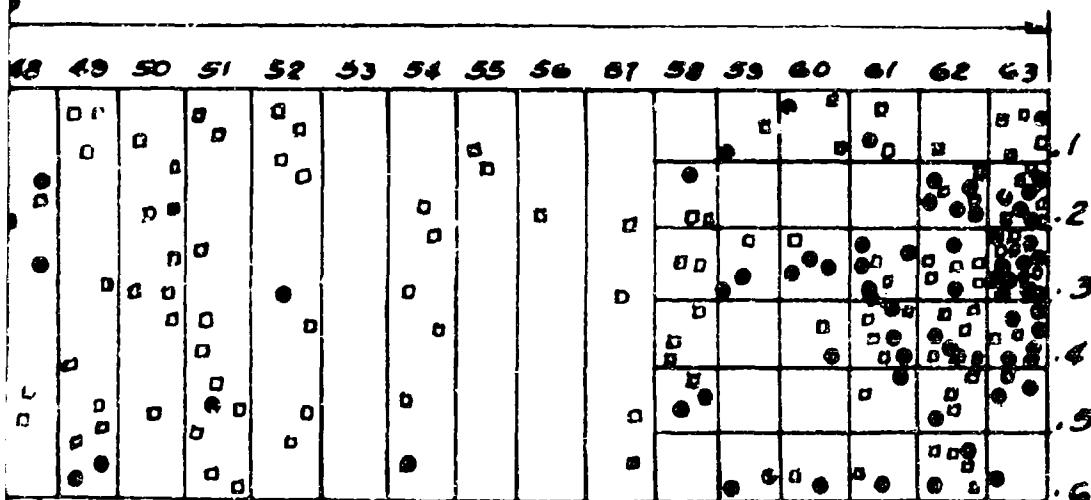
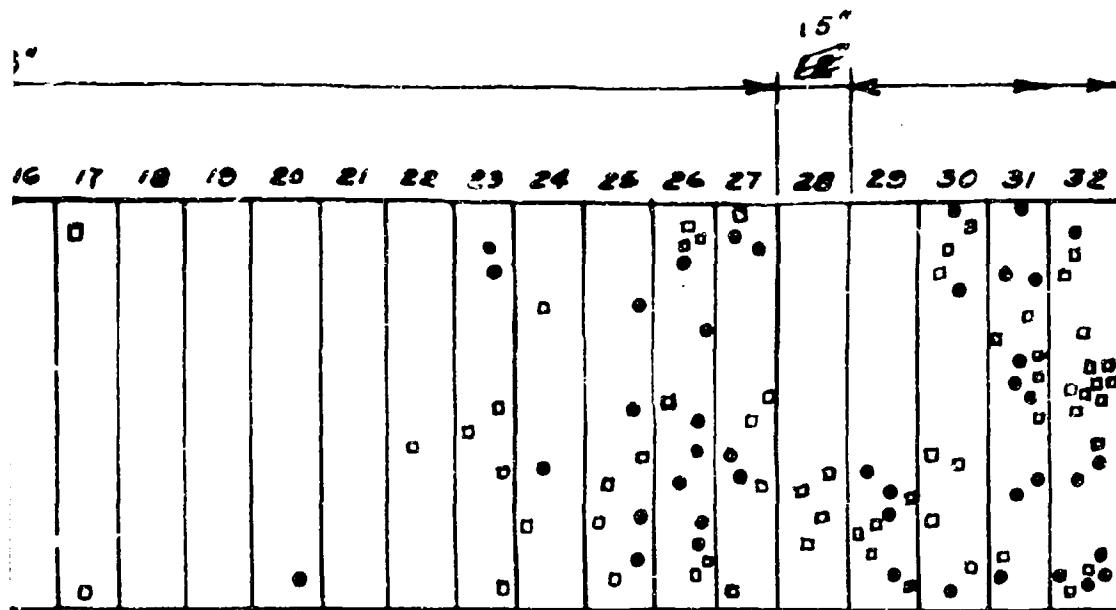
DATE FIRED - 8 OCTOBER 52

OPENETRATIONS - 2

POSITION - HORIZONTAL

A

'5 180° APC



2

LACED VERTICALLY.

PERFORATIONS - 185

ENETRATIONS - 279

RANGE OPERATIONS SECTION

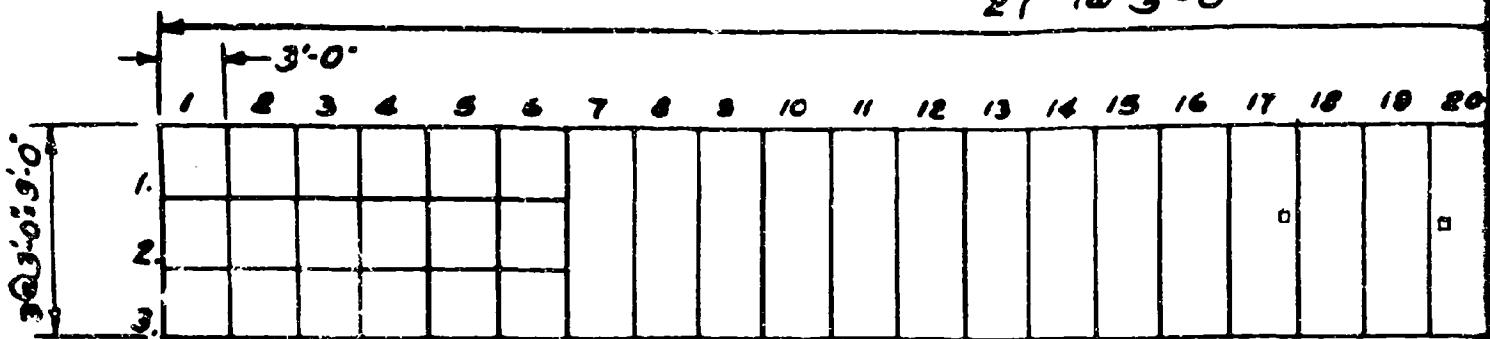
117A
LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT. RADIUS)

ABERDEEN PROVING GROUND MD.
OCT 27, 1944

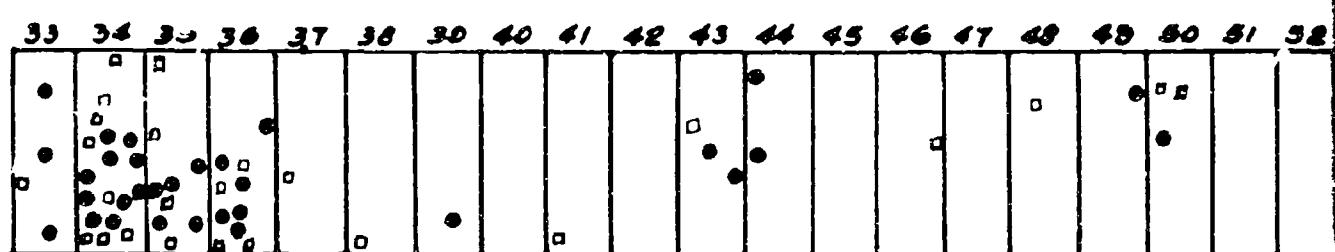
APG 1187G-15 PR

PANEL B
60 FT. RADIUS 180° ARC

27 @ 3'-0"



35 @ 3'-0"



1

1" NO. 3 PINE BOARDS (DRESSED) PLACED VERTICALLY

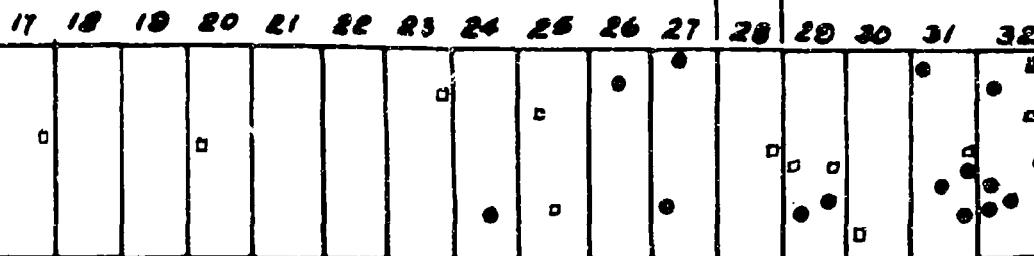
SHELL - 122 MM, OØ462, SOVIET
DATE FIRED - 8 OCTOBER 52
POSITION - HORIZONTAL

RD.N013

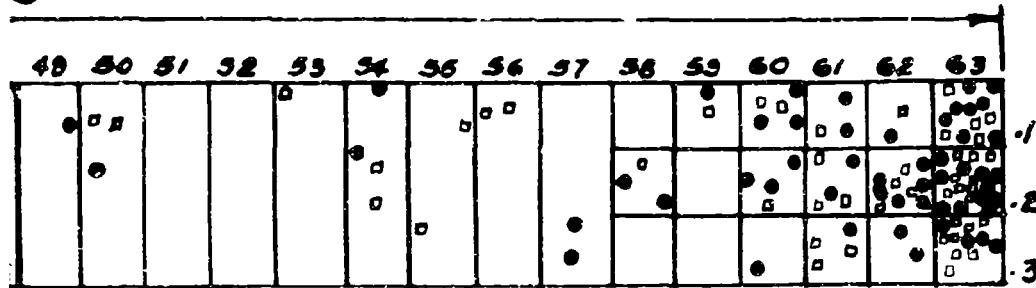
● PERFORATION
□ PENETRATION

3

180° ARC



0"



2

ACED VERTICALLY.

RANGE OPERATIONS SECTION

PERFORATIONS - 97
PENETRATIONS - 84

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

(X17B)

ABERDEEN PROVING GROUND, MD.
OCT. 27, 1944 APG 11876-14 PR.

PENETRATIONS OF SHELLS IN PANELS

122mm, QF-400 624903 AT/00

Soviet

691 454

LOT NUMBER }
STIRLING }
NUMBER
S-12545 } 12545

8 Oct 52

XXXXXX-xx_Sheet 12 of 12

LAKKAPUK Round No. 13

FISHES			PREDATION		
NAME	AGE	LENGTH	WIFTS	DEPT	
63.3	17	12			
	15	7			
Total		11			9
63.3	4	4	4	3	1
	6	3	4	4	2
	3	3	29	10	7
	11	9	5	2	2
			4	3	2
			2	2	2
			2	2	1
			3	3	2
Total		4			8
TOTALS					
60° FISHES		97			84

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CONFIDENTIAL

FRAGMENT VELOCITY DATA

Part of Shell, No. 12244, Soviet AF/83

Side Recovery Box Data

Proof Director Mr. Q. L. Roseau

Date Fired 30 June 1953

Distance from detonation point to target 22.69 feet. Found No. 18

Round statically detonated and velocity obtained by Photographic Methods.

Fragments No.	Weight, Grains	Velocity, f/s	Fragments No.	Weight, Grains	Velocity, f/s	Fragments No.	Weight, Grains	Velocity, f/s
1	174(2)	2723	17	N.R.		33	21	2320
2	N.R.		18	455	3085	34	262(2)	2604
3	4		19	258(3)	2866	35	5	2347
4	136	2501	20	153(2)	2033	36	9	2415
5	42		21	04	3204	37	137(2)	2304
6	207		22	306(2)	3204	38	2	
7	N.R.	2760	23	2		39	04	2330
8	1		24	2		40	90	2450
9	0+		25	0+		41	12	
10	136	3142	26	6		42	609	2525
11	7	2723	27	3	2918	43	22	
12	209	3142	28	9		44	35	
13	1743(4)	3204	29	15	2439	45	122	
14	2		30	618	2476	46	97(2)	
15	N.R.		31	5		47	156(2)	
16	1		32	1		48	369(3)	2301

Average velocity 2751 ft/sec.

(2) - total weight of two pieces.

N - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than $\pm 3.9\%$ for the highest velocity and $\pm 2.5\%$ for the lowest velocity.

Sheet 1 of 1

CONFIDENTIAL

FRAGMENT VELOCITY DATA

Test of Shell, HE, 122mm, Soviet

Side Recovery Box Data

Proof Director Mr. O. L. Rogers

Date Fired 30 June 1953

Distance from detonation point to target 28.69 feet. Round No. 13

Round specifically detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
49	6							
50	2							
51	44							
52	N.M.	3033						
53	194	3083						
54	3	3083						
55	279							
56	5	2918						
57	312	2971						
58	219	2918						
59	04	3026						
60	N.R.							
61	124	2918						
62	N.R.	2666						
63	5							
64	8	2415						

Average velocity 2751 ft/sec.

(2) - total weight of two pieces.

N.V. - no velocity recorded.

(n) - total weight of n pieces.

N.R. - not recovered.

Individual velocity inaccuracies are less than \pm 3.9 % for the highest velocity and \pm 8.5 % for the lowest velocity.Sheet 17 of 27
CONFIDENTIAL

OCTOBER 19 FEB 48
FORMERLY 10072-F-291

PENETRATION OF SHELLS IN PANELS

CAT 20 June 60

PENETRATIONS OF SHELL 120MM, OP-452 LADED AT/60

LGT. ADJUST

FIRING POSITION NUMBER

PROJECTILE NUMBER

PENETRATIONS Sheet 1 of 8

TANK Round No. 18

IN PANELS WITH BACK

Soviet

301

AND

FEET

NUMBER

PANEL NUMBER	PENETRATIONS			PANEL NUMBER	PENETRATIONS			PANEL NUMBER	PENETRATIONS		
	TYPE	DEPTH	LENGTH		TYPE	DEPTH	LENGTH		TYPE	DEPTH	LENGTH
1.4			2	1	1			13		1	1
Total							1	Total			1
2.5			2	1	1			14		1	1
Total							1	Total			1
3.2			6	3	?			15	5	3	
Total					1			Total	1		
4.4			8	3	2			17		1	1
Total					1				1	1	2
									2	1	1
5.1			9	3	2			Total			3
Total					1						
6.3			5	3	2			18		2	2
Total					1				3	1	2
								Total			2
7			6	2	7			21		3	2
			1	1	1			Total			1
Total					2						
8			2	1	1			22		3	2
Total					1				1	1	1
								Total			2
10			16	6	5			23		1	1
Total					1				1	1	1
								Total			2
11			2	1	1			24		1	1
			1	1	1			Total		2	1
Total					2				4	2	3
											3
12			2	1	1			Total			
			2	2	1						
Total											

CONFIDENTIAL

ARMY OR ARSENAL PROVINCIAL RECORD NO. 445

PENETRATIONS SHELLS IN PANELS

LOT NUMBER
FIRING ROLL NUMBER
PRIORITY
DATE 30 JUN 68
ZONATION Sheet 2 of 8
MAXIMUM Round No. 18

PENETRATIONS OF SHELL 120 mm OF-486 LOADED AT/60
Soviet

TIME NOV. 58	SHELL NUMBER	PENETRATIONS			FIRE	PENETRATIONS	FIRE
		DEPTH	ALIGHT	SHATTER		DEPTH	ALIGHT
25		3	2	6	30	12	6
		2	2	2		3	2
		1	1	1		4	2
Total				3		1	1
						1	1
26	13	5	1	1	Total	1	
	6	4	1	1			6
	7	5	1	1	31	38	6
		1	1	1		9	5
		2	2	4		1	1
Total	3			5		8	6
					Total	3	
27	4	3	1	1			2
	30	7	3	2	32	18	8
		4	3	5		20	8
		1	1	1		16	8
Total	2			4		28	12
						5	3
28	20	3	3	1	Total	5	
	6	4	1	1			6
	30	10	3	2	33	3	2
	38	8				60	3
	8	5				6	2
Total	5			3		15	2
						6	1
21	6	2	1	1		9	1
		3	2	2		5	1
		2	2	1	Total	7	
		2	1	3			6
		3	2	3	34	11	6
		6	3	4		5	3
Total	1			6		50	11
						11	4
						2	2

CONFIDENTIAL

C-17 IN F-240

PENETRATIONS OF SHELLS IN PANELS

PENETRATIONS OF SHELLS IN PANELS

U.S. NAVY

GUNNERS

PROBABILITY

B-100 June 5.

PENETRATIONS OF SHELL 122MM, PNT-130, LOADED 50/50
SOVETEXPERIMENTAL Sheet 3 of 8
ROUND 13 Round No. 13

IN PANELS WITH EACH OF 80% AND 50% FEET

TESTED NUMBER

PANEL NUMBER	PENETRATIONS	PROBABILITY	PANEL NUMBER	PENETRATIONS	PROBABILITY
	WIDE	LEAD		WIDE	LEAD
20	8	1	1	1	
9	3	2	1	2	
14	10	3	2	4	
24	9	2	2	5	
8	4	4	3	4	
4	3	3	2	6	
7	3	1	1	1	
18	12				
28	12				
4	4				
16	9				
Total	15		10		
35	13	3	4	2	9
16	8	2	2	5	
64	9	3	2	4	
7	3	1	1	1	
3	3	3	2	2	
5	4	3	2	4	
13	11	4	1	1	
26	8	2	1	1	
32	11				
20	6				
42	9				
12	11				
Total	12		8		
36	6	4	2	2	1
22	9	2	1	1	
8	7	4	3	4	
20	6	2	2	2	
6	4	2	2	1	
16	4	11	3	4	
		9	3	4	

PANEL NUMBER	PENETRATIONS	PROBABILITY	PANEL NUMBER	PENETRATIONS	PROBABILITY
	WIDE	LEAD		WIDE	LEAD
37	6	6	6	6	6
Total	6	6	6	6	6
39	12	8	4	1	1
Total	1	1			
40	16	9	2	2	3
	11	6			
Total	2				
42	5	4	4	2	4
	9	6	2	2	2
	9	5			
48	9	9			
Total	5	2			
43	3	2	4		
Total			1		
44	8	3	3	7	
Total	3	3	2	3	2

CONFIDENTIAL

CROSS DAY 10 PEL 47
FORMERLY SPOT-1442

DATE 30 JUN

PENETRATION OF SHELLS IN PANELS

121600 12 NOV 1944

TOP SECRET

REF ID: A688

EXACT-X Sheet 4 of 8

EXACT-X Round No. 18

REF ID: A688

1000 ft. - 1000 ft., CP-460, target AT/60
Soviet

Elevation - 30°, time 1000 hrs.

FEST

Panel Number	Penetrations			Panel Number	Penetrations			Panel Number	Penetrations		
	1000 ft.	1000 ft.	1000 ft.		1000 ft.	1000 ft.	1000 ft.		1000 ft.	1000 ft.	1000 ft.
47	2	2	1	53				1	1	1	1
Total			1					2	1	1	1
48	12	8	2	1	Total			1	1	1	1
			2	1							3
			1	1	54			2	1	1	1
Total	10			3				2	1	1	1
					Total						2
49	6	4	3	1	55	4	4	2	1	1	1
Total	1			1	Total		1				1
50	10	7	2	1	56	4	3	1	1	1	1
			2	2	9	6	2	1	1	1	1
			2	1				1	1	1	2
			4	3	7	5	4	3	3	3	7
			3	2	11	3	3	2	2	1	1
Total	1			5	Total			2	1	1	1
					Total	4					5
51			2	1	57						
			1	1	5	2	1	1	1	1	2
			4	3	8	2	1	1	1	1	1
			2	2				1	1	1	1
			3	1	Total	2					3
			1	1	59.4			4	2	2	
Total			1	1	Total						1
52	4	3	5	2	60.2	4	3				
			2	1	Total		1				
			2	1							
			2	1							
Total	1				60.3			4	3	2	
					Total				1	1	1
											2

REF ID: A688

90000-717-16 100-41
PROJECT NUMBER

PENETRATION OF SHELLS IN PANELS

LOT NUMBER
STRIKE NUMBER
SERIAL NUMBER

DATE 30 JUNE 44

KODAK Sheet 5 of 8
NIGHT TEST Round No. 18

PENETRATION OF SHELL 122mm, OF-402 LOADED TNT

IN PANELS WITH A RADIUS OF 30' AND FEET

SHELL NUMBER	CALIBER INCHES	WIDTH INCHES	LENGTH INCHES	PENETRATIONS		PANEL NUMBERS	PENETRATIONS		PENETRATIONS		
				BLAST	DEPTH		DEPTH	BLAST	DEPTH	BLAST	DEPTH
61.1	20	6				63.2	5	3	4	5	4
Total		1					14	9	1	1	1
						Total		2			2
61.3	13	8	2	2	3						
Total					1	63.3	10	4	8	8	3
							28	8	3	3	5
61.4	8	6	3	1	0				1	1	1
Total		1			1	Total		2			3
61.5	2	10				63.4	26	8	5	2	3
Total		1					15	15	2	2	2
							19	9	1	1	1
62.1	5	3	3	1	2		14	3			
			3	2	1		5	4			
				2	1		10	8			
Total		1			3		9	5			
							10	7			
62.2			1	1	2		6	4			
Total					1		6	4			
						Total		10			3
62.3	30	22	2	2	2						
	8	3	3	2	4	63.5	5	4	4	3	2
		3	3	6			32	16			
Total		2			3		4	3			1
						Total		3			1
62.4			2	1	5						
			3	2	2	63.6	9	5			
Total					2	Total		1			
62.5	8	4	2	2	3						
	5	4	3	2	3	TOTALS					
Total		2			2	30' RADIUS	110				170

CONFIDENTIAL

PERIOD				SHELLS IN USE		PERIOD					
				AMMUNITION	AMMUNITION	PERIOD	PERIOD	PERIOD			
12	13	14	15	16	17	18	19	20			
		2	1	1		26	26	9	2	1	1
				1		4	4	4	4	2	2
									2	1	2
10		3	1	1					3	2	3
Total				1		Total		2			4
11		3	2	2		29	8	4	1	1	1
Total				1					2	2	5
									2	1	1
12		2	2	1		Total		1			3
Total				1							
13		2	1	1		30	14	6	3	2	1
Total				1		Total		1			2
32		3	1	1		31	4	3	1	1	1
Total				1			12	5			
						Total		2			1
33		4	3	4		32	28	12	3	3	3
Total				1			6	8	2	2	1
25	8	4							5	4	6
Total	1					Total		2			3
34		2	1	2		33	24	6	8	2	2
		4	3	3			30	7	3	2	2
Total				2			13	9	2	1	1
47	44	9	3	2	4		20	10	2	1	2
		2	1	1					3	1	2
		3	1	2		Total		4			6
Total	1			3							

PERFORATION STATUS REPORT

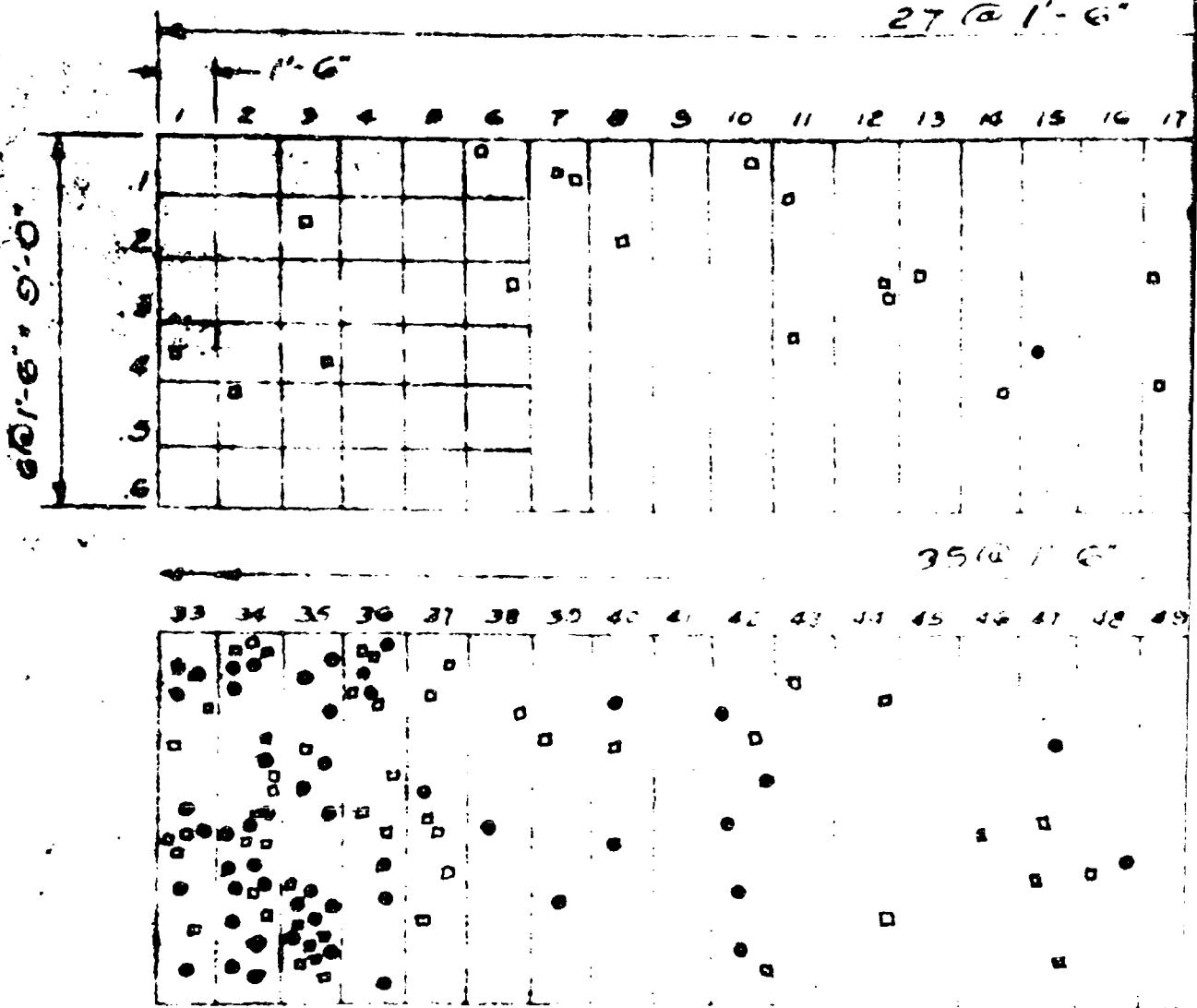
1000', CP-182, 1000' (1/2)					1000', CP-182, 1000' (1/2)				
	CO'	Radius	Min	Max		CO'	Radius	Min	Max
61.1		6	3	4	63.2	6	4	3	4
Total				1		10	5	2	1
						8	4	2	1
61.2	25	12	3	2	2	10	5	7	4
			4	2	2	16	12	3	2
			1	1	1	6	4	2	1
			2	1	1	19	12	5	4
Total				4		9	3	1	1
								1	1
62.3	6	4	4	2	2	Total		0	9
				5	2				
Total		1			2	63.3	7	7	1
						12	6	2	1
62.1	25	20	2	2	3	10	6	2	4
	20	9	5	3	4			2	1
Total		2			2			2	1
								1	2
62.2	6	4	7	3	5	Total		3	6
	10	6							
Total		2			1				
						TOTALS			
62.5	4	4	3	2	2	CO' Radius	85		84
	20	15	1	1	1				
			2	2	4				
			1	1	1				
Total		2			4				
63.1	12	12	4	3	2				
	6	4	2	2	1				
	6	4	4	3	5				
Total		3			3				

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8-11822

CENTRAL PANEL A

30 FT RADIUS



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 30 JUNE 53 RD. NO. 18

PERFORATIONS:

SHELL: 122 MM, SOVIET

PENETRATIONS:

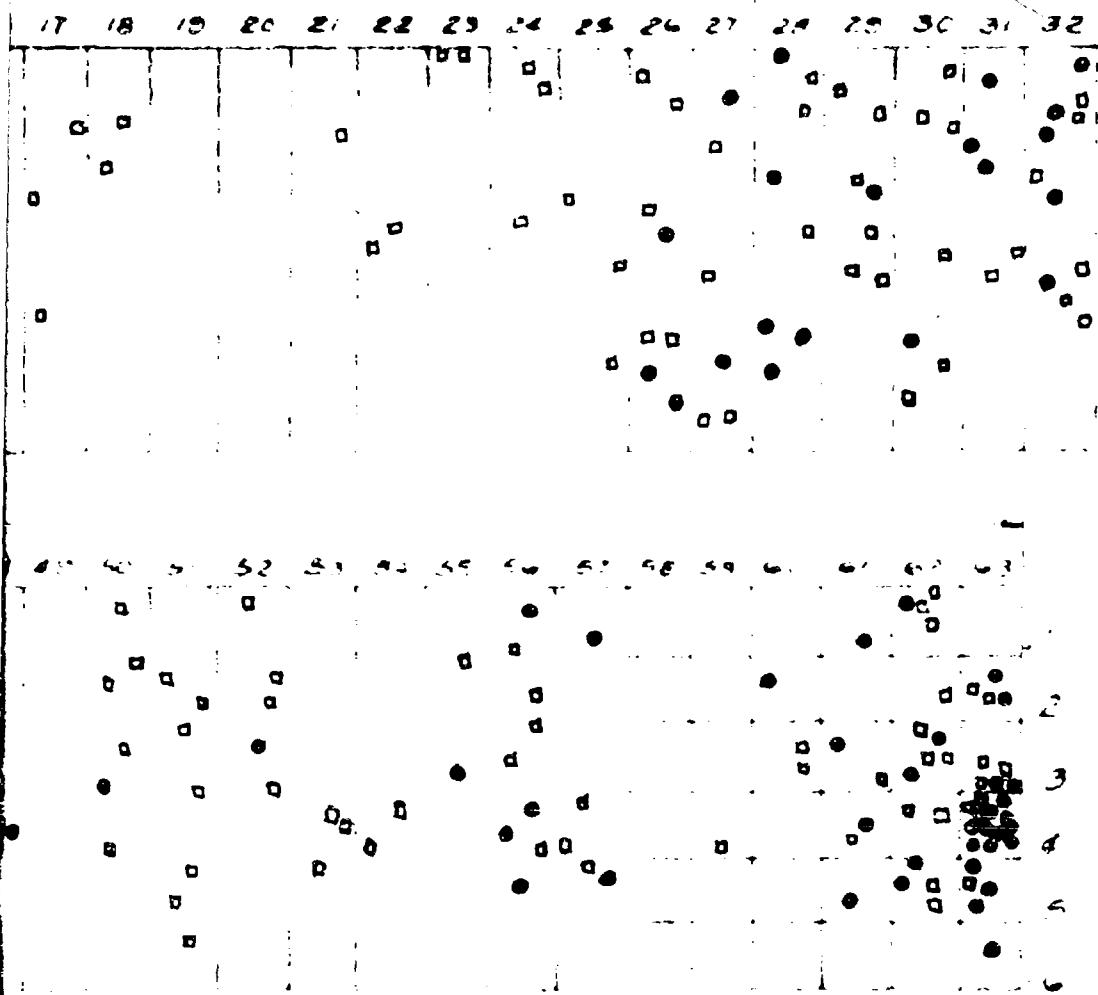
POSITION OF SHELL: HORIZONTAL

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A

180° AEC

15"
12"



RECD VERTICALLY.

RANGE OPERATIONS SECTION

0- 110

LAYOUT OF CHANNELS

FOR

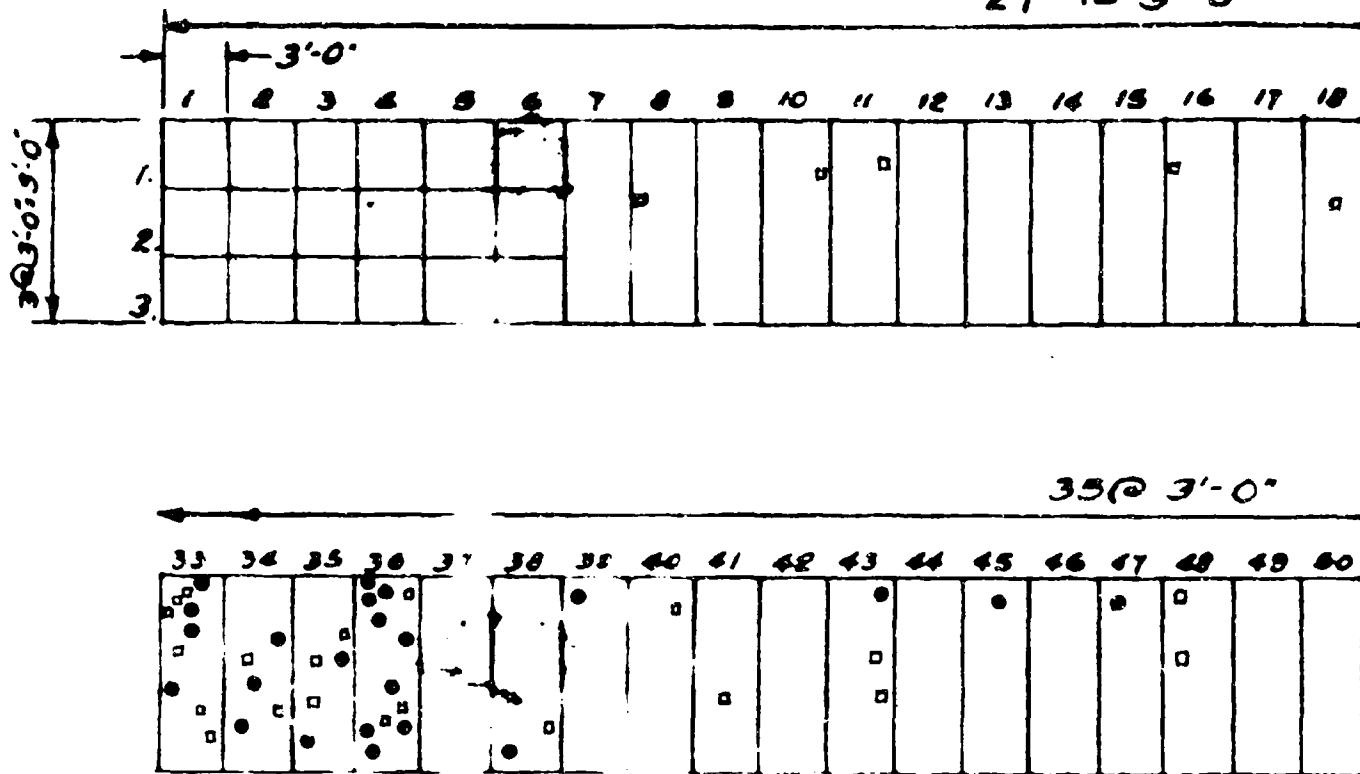
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT RADIUS)

ABOVE GROUND SURFACE

OCT 27 1944

PPS 11876-15

PANEL B
60 FT. RADIUS 130
27 @ 3'-0"



1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 30 JUNE 53 RD. NO. 18

PERFORATIONS: •

SHELL: 122 MM, SOVIET

PENETRATIONS: 0 •

POSITION OF SHELL: HORIZONTAL

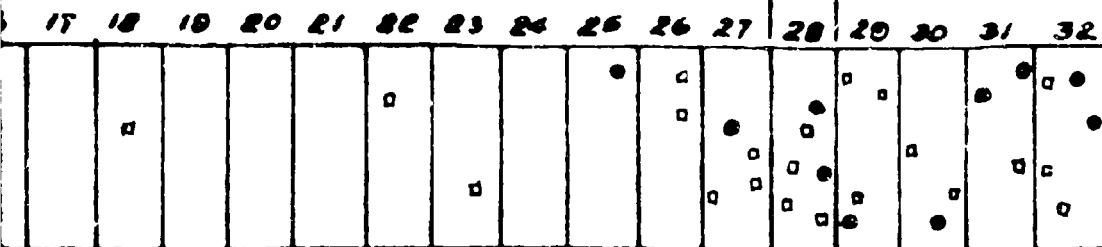
1923.5.20.1

1

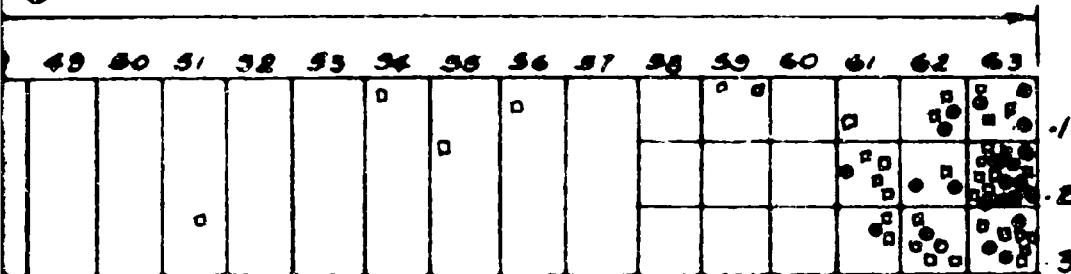
B

S 180° ARC

0°



0°



2

ACED VERTICALLY.

RANGE OPERATIONS SECTION

0: 55

0: 84

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT. RADIUS)

ABERDEEN PROVING GROUND, MD
OCT 27, 1964

APG 11876-14 PR

CONFIDENTIAL



FRAGMENT VELOCITY DATA

Type of Shell, M1A1 122mm Soviet AP/FP Side Recovery Box Data

Name of Director Mr. G. L. Rogers Date Fired 15 July 1945

Distance from detonation point to target 22.76 feet. Round No. 19

Vibrationally detonated and velocity obtained by Photographic Methods.

Frag. at Re.	Weight, Grams	Velocity, f/s	Frag. at No.	Weight, Grams	Velocity, f/s	Frag. at No.	Weight, Grams	Velocity, f/s
1	4	3202	17	N.R.		33	163	3405
2	14		18	N.R.		34	11	3460
3	0+		19	N.R.		35	151	3460
4	15(2)	2750	20	2		36	10	
5	N.R.		21	25	3250	37	16	2460
6	28	3065	22	0+	3065	38	N.R.	
7	2	3022	23	N.R.	3025	39	N.R.	2495
8	929(2)	3135	24	125	3155	40	N.R.	
9	171	2423	25	N.R.		41	3	
10	3	3107	26	6	3300	42	1220(3)	2584
11	16	2389	27	0+	3250	43	178	2525
12	245	3107	28	114	3155	44	2	
13	0+	2939	29	753	3155	45	117	
14	4		30	N.R.		46	3	
15	2		31	1	2899	47	50	
16	7	3065	32	2		48	339(2)	2701

Average velocity 3044 ft/sec.

(2) - total weight of two pieces.

N.R. - no velocity recorded.

(n) - total weight of n pieces.

NR - not recovered.

Individual velocity inaccuracies are less than $\pm 3.6\%$ for the highest velocity and $\pm 3.1\%$ for the lowest velocity.

Short 22-02-26

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FRAGMENT VELOCITY DATA

Type of Shell, 16, 122mm. Soviet Side Recovery Box Data

In. of Director Mr. O. L. Rogers Date Fired 15 July 1952

Distance from detonation point to target 22.73 feet. Round No. 19

Round startingly detonated and velocity obtained by Photographic Methods.

Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s	Fragment No.	Weight, Grains	Velocity, f/s
40	100		65	1		81	59	
50	23		66	3	3202	62	69	3527
51	2		67	3				
52	10		68	0+	3155			
53	447		69	10				
54	N.R.		70	N.R.				
55	8		71	1				
56	0+		72	23	2930			
57	N.R.		73	N.R.	3155			
58	2		74	3	2823			
59	21	3107	75	5				
60	47	2640	76	203	3315			
61	158(2)		77	N.R.				
62	N.R.	3202	78	5				
63	103(2)		79	N.R.				
64	516	3202	80	201				

Average velocity 3044 ft/sec.

N.R. - no velocity recorded.

N.R. - not recovered.

(2) - total weight of two pieces.

(n) - total weight of n pieces.

Initial velocity inaccuracies are less than $\pm 3.6\%$ for the highest velocity
 $\pm 3.3\%$ for the lowest velocity. 2 2.

Sheet 21 of 23

CONFIDENTIAL

PENETRATIONS & SHELLS IN PANELS

LOT NUMBER
STRIPPER NUMBER

DATE 6 July 1

FRONTAGE NUMBER

HARDWARE Sheet 1 of 9

ARMORPLATE Round No. 19

WATER NUMBER

120mm. Gun, Gp-462 tested AT/CO
Covered

INSTRUMENT NO. 401 AND FEE

Panel Number	Penetrations			Panel Number	Penetrations			Penetrations		
	Length	Width	Depth		Length	Width	Depth	Length	Width	Depth
5.3	2	1	1	Total		1				
Total			1							
7	2	1	1	24	8	6	2	1	1	
Total			1		16	6	2	2	1	
8	6	4	4	Total		2				4
Total			1		25	4	3	3	2	9
10	3	2	6		4	3	2	1	6	
Total			1					2	2	4
11	4	3	4				1	1	7	
Total	1	1	1				1	1	1	
12	2	1	1	Total		2				6
Total			1		26	4	3	4	2	2
17	1	1	4		13	5	2	1	1	
Total			1		34	6	3	3	5	
19	1	1	1	Total		8	5			
Total			1		27	19	4	4	3	3
	1	1	1		19	6	1	1	1	
	2	2	2		19	8	1	1	1	
Total			3		28	10				
21	1	1	1	Total		4				3
Total			1					4	1	1
22	1	1	1				2	1	1	
Total			1				3	1	1	
23	3	1		Total						3
					29	2	1	2	1	2

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PENETRATIONS OF SHELLS IN PANELS

Date 15 Sept 68

PENETRATIONS OF SHELLS 120mm, QF-462
SOVIET

LOAD AT/60

IN PANELS WITH BACKING

AND

LOT NUMBER 1000-221
FIRING DATE 15 Sept 68
PRIORITY LEVEL

PENETRATION Sheet 2 of 9

XARYTAK Rev. 3 No. 19

POINT NUMBER

IN PANELS WITH BACKING

AND

PENETRATION

IN FEET

IN FEET

IN PANELS WITH BACKING

AND

PENETRATION

IN FEET

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IN PANELS WITH BACKING

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CONFIDENTIAL

PENETRATION OF SHELLS IN PANELS

DATE 16 July 53

PENETRATION OF SHELL 122mm, CP-402, GRADED AT/60
IN PANELS AND FEET

XEROX Sheet 3 of 9

PENETRATION Round No. 19

PANEL NUMBER	PENETRATION DEPTH	WEIGHT	PENETRATIONS			PANEL NUMBER	PENETRATION DEPTH			PENETRATION DEPTH
			LENGHT	WIDTH	DEPTH		LENGTH	WIDTH	DEPTH	
35-cc-124	13	2	2	3	3	43	12	10	2	2
	17	5	2	1	1		11	11	1	1
	3	2	1	1	2				3	5
	6	4	2	1	1	Total	2			3
	49	14	2	1	3					
	25	8	5	4	4	44	6	2	1	1
Total	12			12			5	3	3	3
							8	4	1	1
36	9	6	8	3	8	Total	3			3
	10	6								
	34	10				45	8	3	2	2
	16	5						1	1	1
	5	5				Total	1			2
	8	4								
Total	6			1		46		2	2	2
								4	3	2
37	11	5	5	1	4	Total				2
	14	8	3	2	1					
Total	2			2		47		5	2	3
								2	1	1
39	7	6						1	1	1
Total	1							2	1	1
								5	3	5
40	3	2	4	2	1			1	1	1
Total	1			1		Total				6
41			1	1	1	48		2	1	1
			1	1	2			1	1	1
			1	1	1	Total				2
Total				3						
42		4				49		1	1	1
Total		1						2	2	1
								2	2	6
								2	1	1

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PERFORATIONS OF SHELLS IN PANELS

CH-45 6 1 58

PERFORATION OF SHELL 122mm, OF-462 LOADED AT/00

Subject: 301 AND FEET

IN PANELS WITH PERFORATIONS

191-12747-12
FEB 43
NUMBER
PRIORITY
USER

WILMINGTON Sheet 5 of 9

YARD NUMBER Round No. 19

FILE NUMBER

PANEL NUMBER	PERFORATIONS	FEET	PANEL NUMBER	PERFORATIONS	FEET
	AS FED	ALIVE		AS FED	ALIVE
57	2 1 1			3 2 4	
	2 1 1			4 4 6	
	2 2 1				4
	2 1 2				
Total		4	60.6	8	5
				4	3
58.1	2 1 1		Total	2	
	4 1 1				
Total		2	61.2	27	17 1 1 1
			Total	1	1
58.4	3 2 1				
Total		1	61.3		2 1 2
			Total		1
58.5	2 1 1				
Total		1	61.4	3	2
			Total	1	
58.6	1 1 1				
Total		1	61.5	5 3 3 2 5	
				13 12 3 2 2	
59.3	2 1 1				
Total		1	Total	2	3
59.5	2 1 1				
	1 1 1		61.6	16	12
Total		2	Total	1	
60.6	4 1 1				
	6 2 1		62.2		1 1 1
	7 1 1 1				2
18	12		Total		
Total	4	3			
			62.3	14 3 1 1 1	
				3 2	
5	1 1 1		Total		1
	3 1 1				
			62.4		

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0501-757-1678-49
FORMERLY 851-125-281

PENETRATIONS & SHELLS IN PANELS

DATE 15 July 19

RECORDED ON 3000 120 VOL 50 W462 10400 17/62
Soviet 801 AVE

RECEIVED Sheet 6 of 9
JULY 1944 Round No. 19

PANEL NUMBER	PENETRATION		PENETRATION		PANEL NUMBER	PENETRATION		PENETRATION		PENETRA- TIONS
	DEPTH	WIDTH	DEPTH	WIDTH		DEPTH	WIDTH	DEPTH	WIDTH	
62.1	1				63.5	14	7	3	1	1
62.5	5	2	7			20	10	3	1	4
	1	1	1			5	3	1	1	1
	2	2	6			14	14			
	2	2	1		Total		4			3
	1	1	1							
Total			5							
										TOTALS
						30' Radius	124			216
62.6	8	5	2	1	1					
	12	3								
Total	2			1						
63.1	20	20	2	2	2					
			1	1	1					
Total	1				2					
63.2			1	1	1					
Total					1					
63.3	10	4	3	2	3					
	18	14	5	4	8					
	4	3	5	4	9					
Total	3				3					
64.4	16	15	4	3	4					
	16	16	5	2	7					
	4	3	3	2	4					
	14	9	5	3	4					
	3	3	3	3	5					
	12	10								
	8	5								
	12	3								
Total	8				5					

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PENETRATIONS OF SHELLS IN PANELS						TEST NUMBER FIREARM NUMBER DATE TESTED		TEST NUMBER FIREARM NUMBER DATE TESTED					
COMBATANT: SOVIET 122MM, CH-402 LOADING A/I/60 SOVIET						TEST NUMBER Sheet 7 of 9 FIREARM NUMBER: 18 TEST NUMBER: 18							
Panel Number	Panel Thickness	PENETRATING			Panel Thickness	PENETRATING			PENETRATING				
		4	3	5		30	13	7	30	13	7		
12													
Total						1	10	6	1	10	6		
						Total		?					
13			3	2	2								
Total						1	31	8	4	2	2		
								9	5	2	5		
22			1	1	1					3	2		
Total						1				3	2		
						Total		2			4		
24			2	2	3								
Total						1	32	16	5	1	1		
								15	6	1	1		
25			4	3	4			15	5				
Total						2	Total		3		2		
26		8	1	1	1		33	6	5	3	2		
		4						4	3	4			
Total		2			1			16	4	1	1		
								7	3				
						Total		4			3		
27	22	5	1	1	1								
	17	4	2	1	1		34	26	10				
		1	1	1				14	8				
		5	4	5				8	5				
Total		2			4			78	13				
						Total		4					
28	10	6											
	22	5					35	11	11	1	1		
Total		2						12	8	1	1		
								18	7	3	2		
			4	2	2			5	4	4	1		
					1			15	4				
						Total		5			4		

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S-10-19 FEB 43
S-10-19 FEB 43

PENETRATION OF SHELLS IN PAPERS

Page 15 of 15

TESTING OF SHELLS, OP-400 GRADE A1/10
in PAPER AIR
60° ANG
FOOT

Sheet 3 of 9

EX-1000, Mount No. 16

Date 1943

PIECE NUMBER	PIECE NUMBER	PENETRATION			PIECE NUMBER	PENETRATION			PIECE NUMBER	
		DEPTH	ANGLE	TIME		DEPTH	ANGLE	TIME		
33	11	0	3	2	49	7	4	7	4	1
	34	10			Total		1			1
	6	3								
	8	0			50			2	1	1
	18	15						3	2	2
Total	5			1	Total			3	2	4
										3
37	12	3	2	1	51		1	1	1	
	5	2	2	1	Total					1
			3	2						
			5	3						
Total	2			4	53	8	6	1	1	1
								3	2	2
38	10	4	2	2	54	11	5			
	7	4	2	1	Total			2	1	1
			3	1				2	1	1
Total	2			3						4
					55			1	1	1
39	4	3	1	1	Total			12	5	6
Total	1			1						2
					56			4	1	1
42	6	4	3	2	Total					1
	11	8	3	2						
Total	2			2						
					59.2			4	2	2
44	7	3			Total					1
Total	1									
					61.1	22	16	3	2	1
								2	2	1
					Total			2	1	1
										2

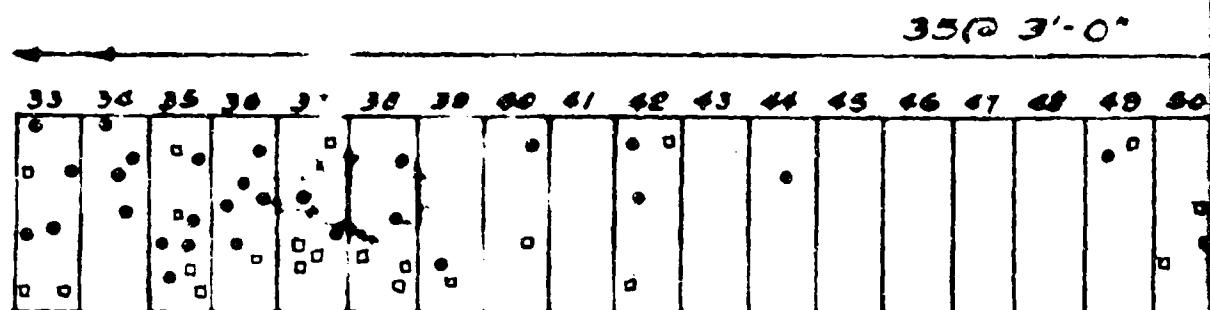
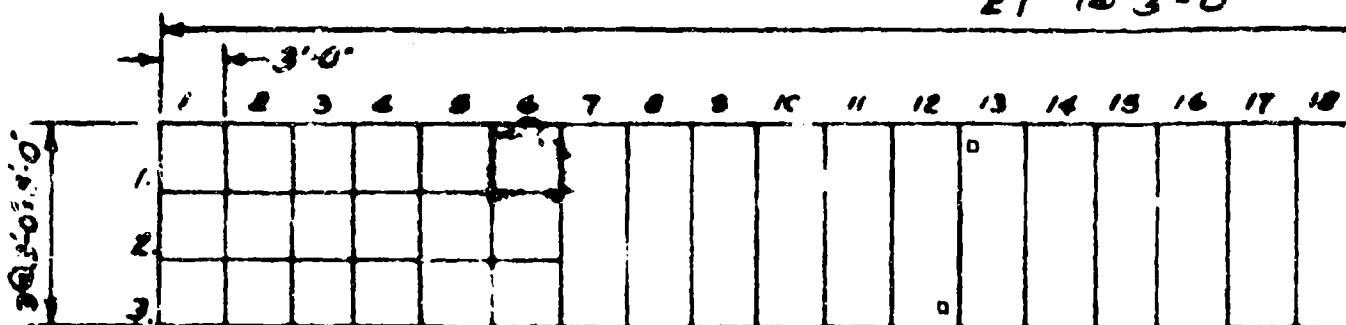
CONFIDENTIAL

19 b

B-11822

C

PANEL B
60 FT RADIUS 180°
BT @ 3'-0"



1)

1" NO. 3 PINE BOARDS (DRESSED) PLACED

DATE: 15 JULY 53 RD. NO. 19

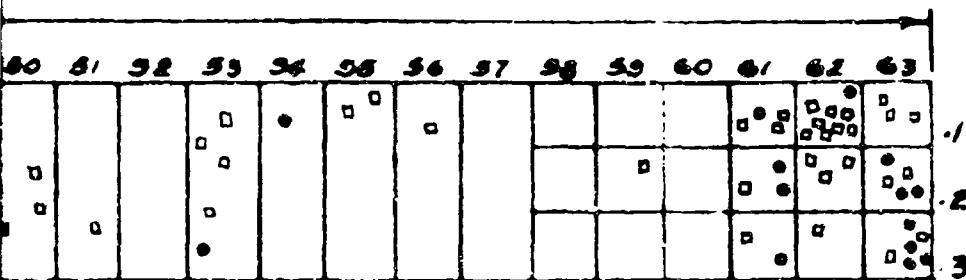
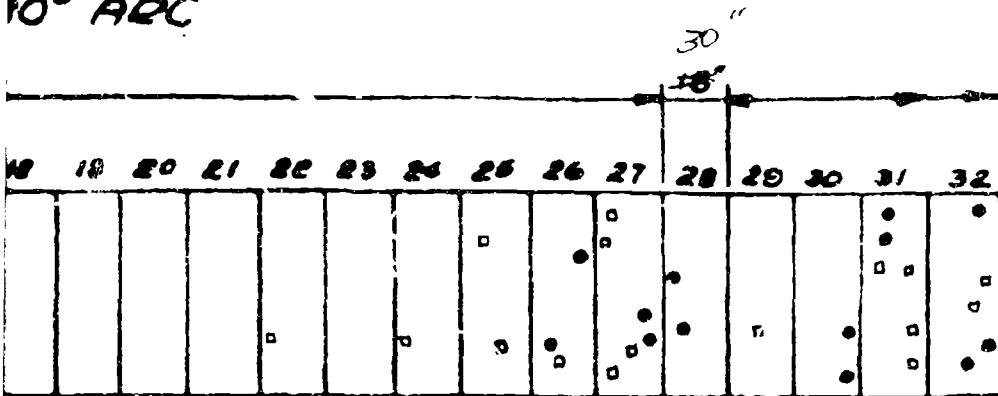
PERFORATIONS: 0 -

SHELL: 122MM, SOVIET

PENETRATIONS: 0 -

POSITION OF SHELL: HORIZONTAL

10° ABC



ED VERTICALLY.

2

RANGE OPERATIONS SECTION

54

75

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(60 FT RADIUS) 24073

ABERDEEN PROVING GROUND, MD
OCT 27, 1944 AUG 11 876-14 PR

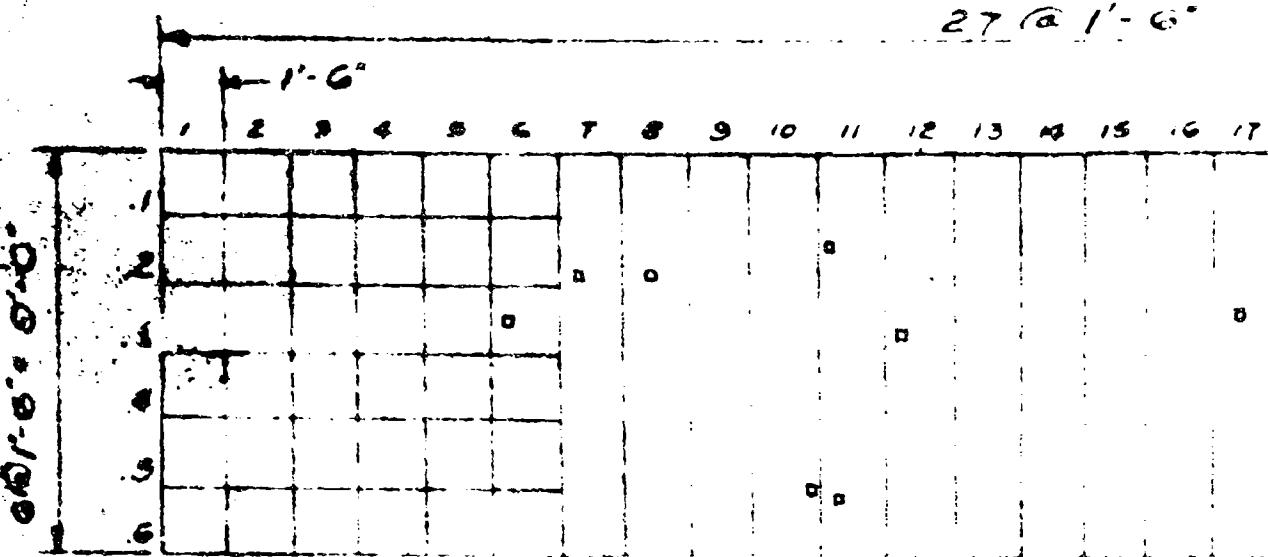
B-11822

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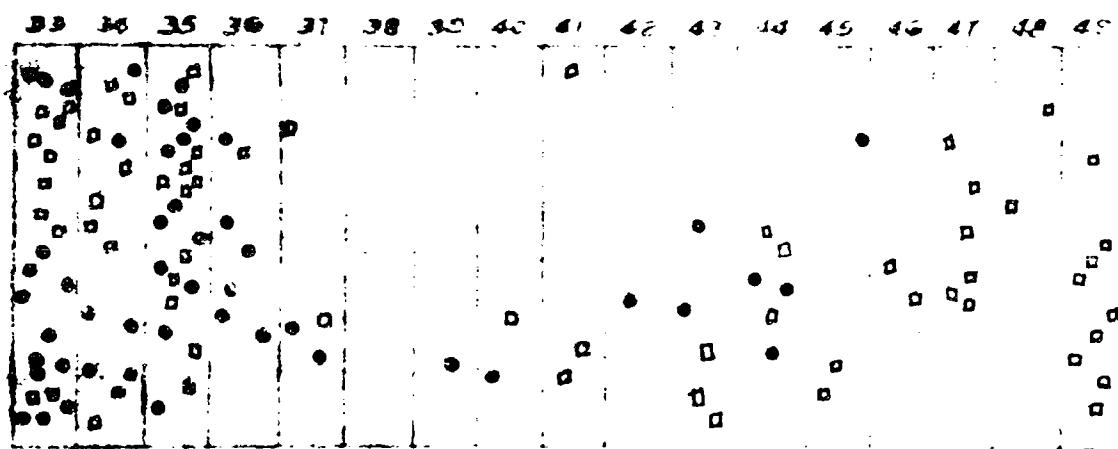
PANEL A

30 FT RADIUS 1

27 @ 1'-6"



35 @ 1' 6"



1" NO. 3 PINE BOARDS (DRESSED) PLACE

DATE: 15 JULY 53 RD.NO. 19

PERFORATIONS:

SHELL: 122MM SOVIET

PENETRATIONS:

POSITION OF SHELL: HORIZONTAL

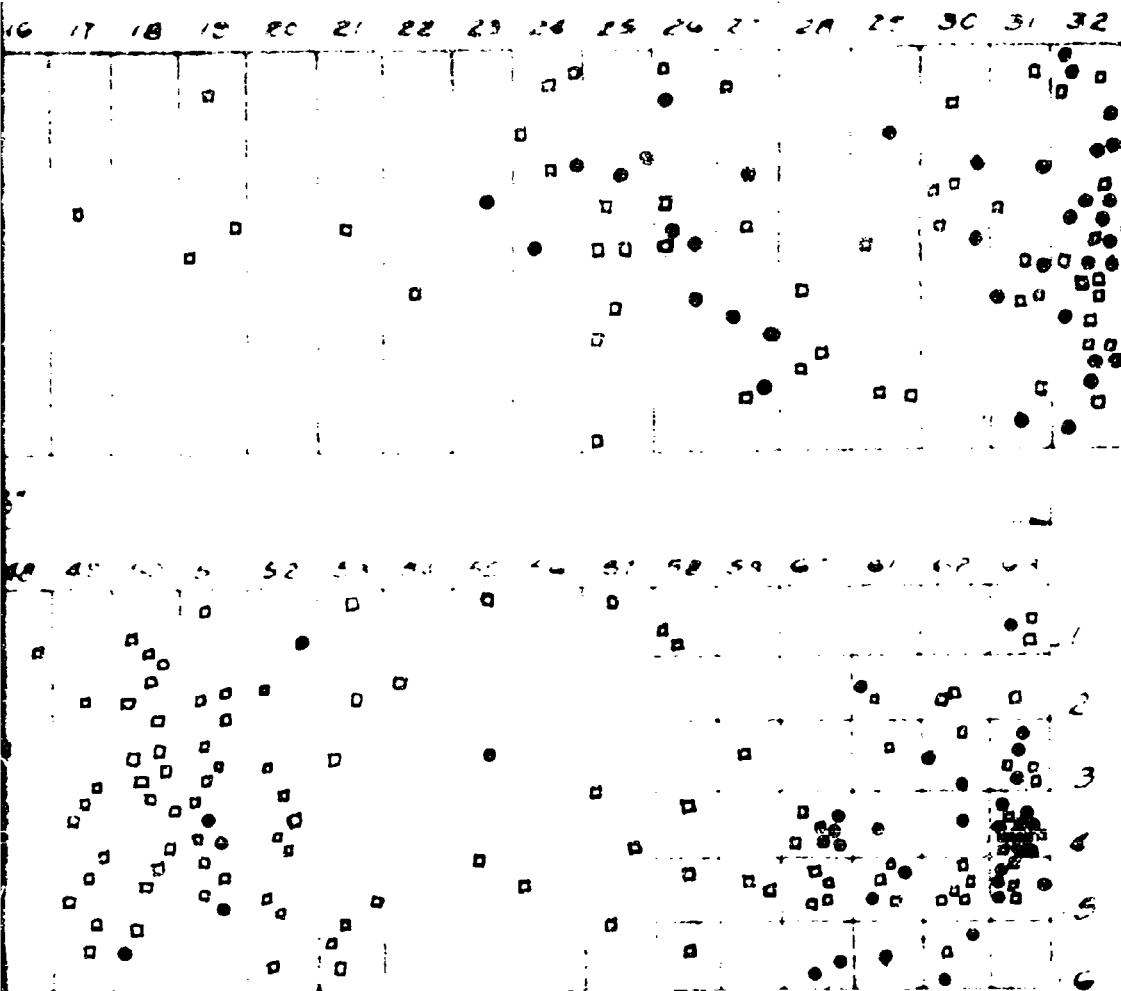
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1

A

IS 180° APC

15"



LACED VERTICALLY

2

RANGE OPERATIONS SECTION

NS: 0 = 124

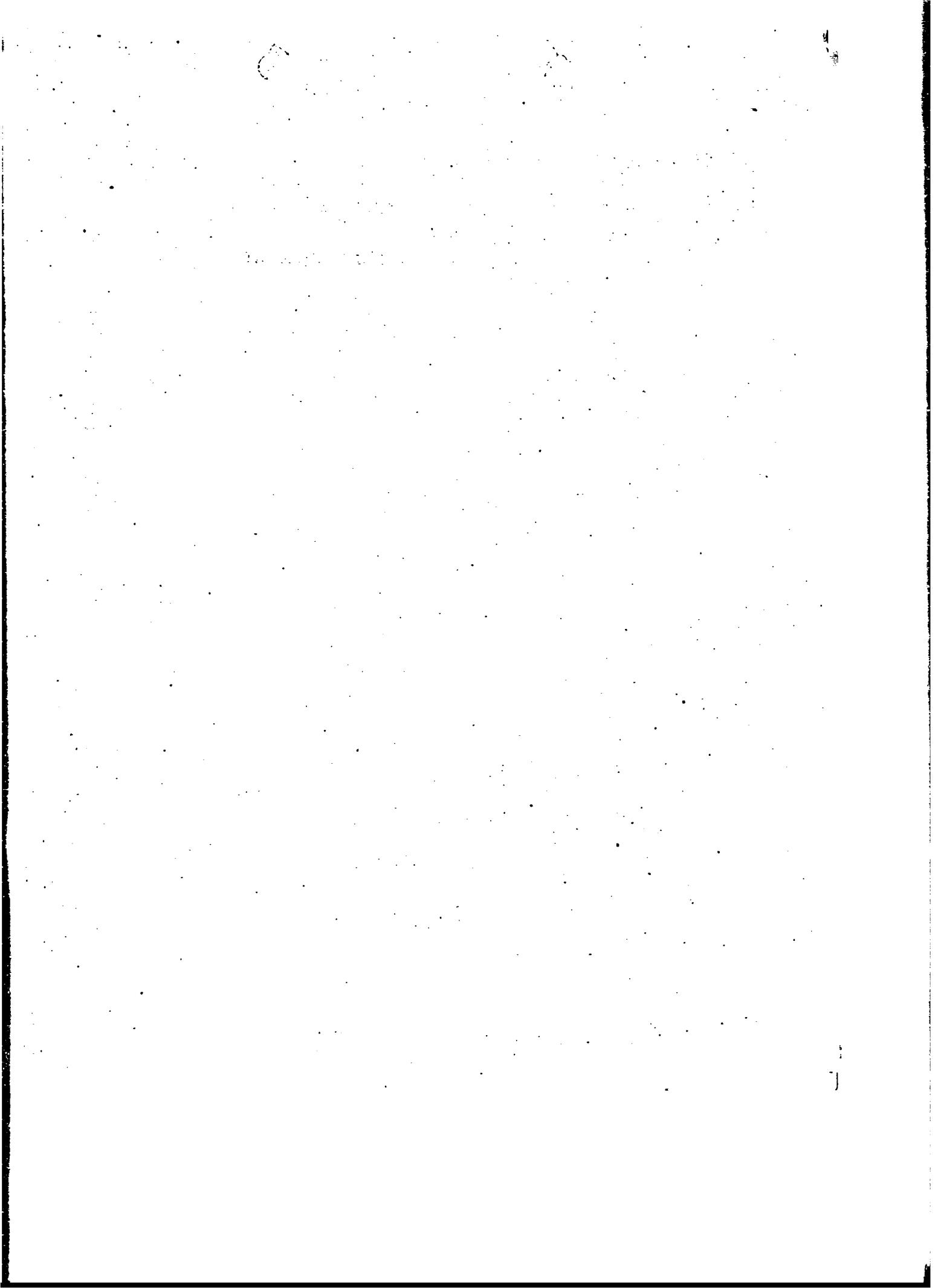
NS: 0 = 216

LAYOUT OF PANELS
FOR
NUMBER AND DISTRIBUTION
OF FRAGMENTS
(30 FT RADIALS)

ABOVE GROUND FLOOR

OCT 27 1944

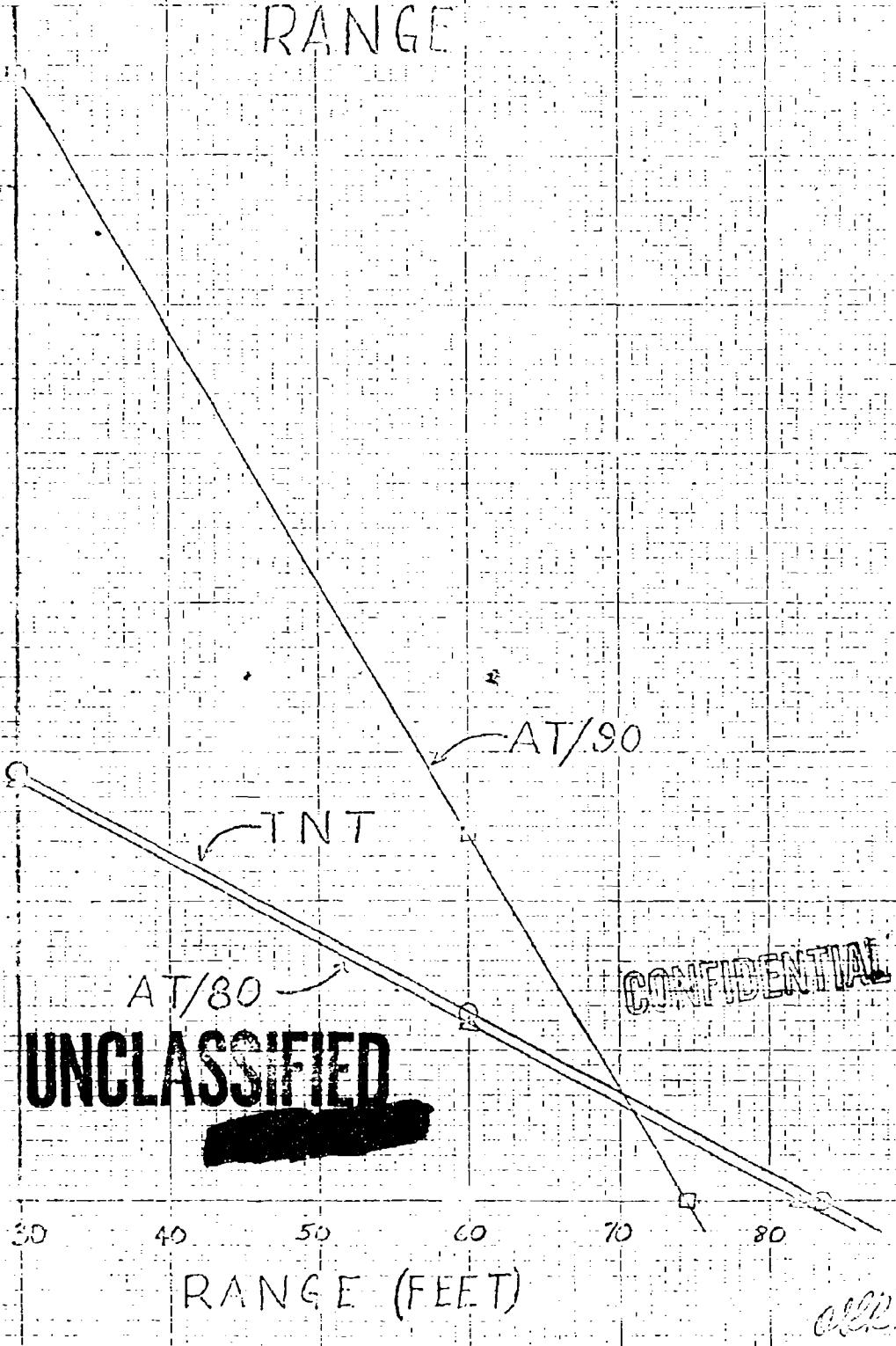
APG 11876-15 PC



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COMPARISON OF LETHAL RANGE

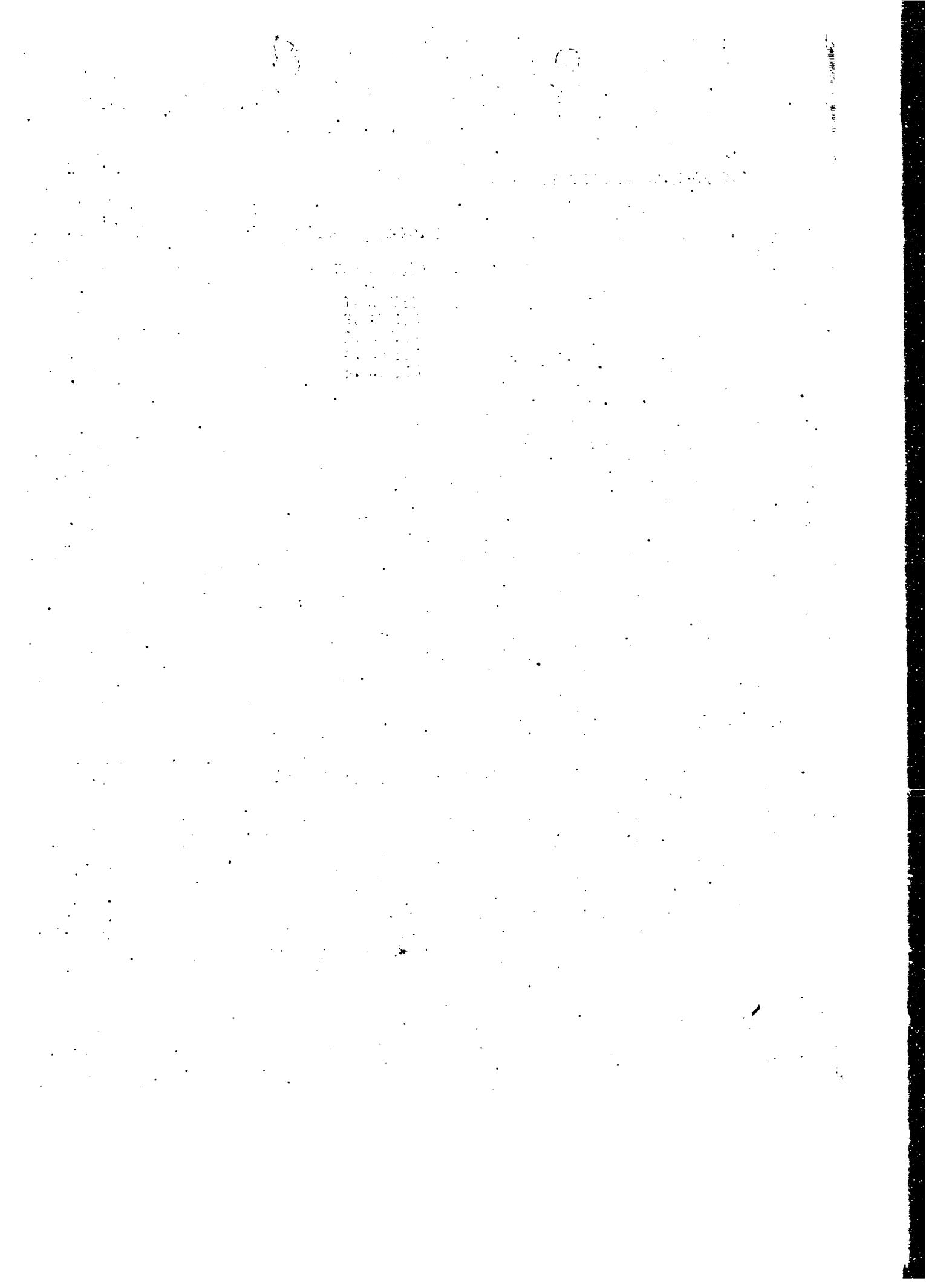
PERFORATING HITS



UNCLASSIFIED

~~CONFIDENTIAL~~

all



APG159

ABERDEEN PROVING GROUND
Shell, 122mm, OF-471-N (Soviet).

1 May 1952

A78158

ABERDEEN PROVING GROUND

1 May 1952

Shell, 122mm, O-462A (Soviet).



0 1 2 3

A78157

ABERDEEN PROVING GROUND
Shell, 122mm, OF-462 (Soviet).

1 May 1952

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GOLDEN GATE

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A97557

ABERDEEN PROVING GROUND

9 April 1954

Project No. TBS-0036. Shell Fragment Identification.

Fragnents, with their respective velocities, of Shell, HE, 122mm,
Soviet, loaded AT/90.

CONFIDENTIAL

A97558

8 ABERDEEN PROVING GROUND 8

9 April 1954

Project No. TB3-0035. Shell Fragment Identification.
Fragments, with their respective velocities, of Shell, HE, 180mm,
Soviet, Rounds No. 13, 14 and 15 loaded
TWT.

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